A Learner Verification and Revision of a Programmed Text
Teaching Stock Market Concepts and Operations to High School Introductory Business Students

Huth
A LEARNER VERIFICATION AND REVISION OF A PROGRAMMED TEXT
TEACHING STOCK MARKET CONCEPTS AND OPERATIONS TO HIGH
SCHOOL INTRODUCTORY BUSINESS STUDENTS

by

Edward T. Huth

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Edward T. Huth
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WESTERN MICHIGAN UNIVERSITY, ED.D., 1978
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INTRODUCTION

One long range goal in education is to teach every student in a subject area a certain set of academic and social behavioral responses relevant to the subject matter.

Academic responses, which could be defined as vocal, gestural or written student behaviors used to answer questions or make statements about the subject matter, have been classified by Bloom (1956) as starting with simple recitation of facts leading up to the more complex behaviors of synthesizing responses (novel behavior) and evaluating subject matter.

Social behavioral responses could be defined as the student's approach responses to a class (e.g. coming to class on time, materials prepared), the student's responses during class (e.g. working on task, motor, vocal or passive off task) and the student's responses at the end of class and after class (e.g. puts materials away, completes homework assignment) (Bloom, 1964). Many studies have been done measuring and changing students' social behaviors and many effective measuring techniques have been devised (Bailey, in press; Koenig, 1976; Leys, 1976).

It is therefore possible to measure student responses of almost any complexity in the classroom. It is also possible,
therefore, to measure and evaluate the effects of many kinds of environmental events upon the rate, duration, intensity, latency and appropriateness of the responses of students. These events can be divided between those which occur before the student makes his or her response to an evaluative item related to a terminal goal of a subject area (antecedent stimuli) and the events which occur after the student has made his or her response (consequent stimuli).

In the antecedent category, some of the events which can be evaluated in terms of their effects upon a student making an appropriate or inappropriate academic response are (1) the federal, state and local laws mandating certain educational practices and the implementation of these laws by each school administration, (2) teacher training programs in colleges and universities, (3) pupil to teacher ratio in the classroom, (4) the design and implementation of curriculum materials, (5) the prerequisite skills of the student, (6) the physical facilities of each school district and (7) the sensitivity of the evaluation materials in measuring what has been taught in the classroom (Becker, Engelmann and Thomas, 1975b; Becker and Engelman, 1976; Mager, 1968).

In the consequence category, some of the events which can be evaluated are (1) the immediate, intermediate and long range consequences the student receives from school personnel and his or her community, (2) the maintainence of the student's skills in school and outside of school and (3) the support the teacher
receives from school personnel and from the community for doing a good job (Becker, Engelmann and Thomas, 1975a; Becker and Engelmann, 1976; Sulzer-Azaroff and Mayer, 1977).

Once a child is in school (and U.S. Public Law 94-142 has made education available to every child) the three most important events in terms of producing appropriate academic responses from the student are probably (1) the curriculum materials used, (2) the implementation of the curricula, including classroom management rules by the teacher and (3) the feedback the student receives from the teacher.

Engelmann and Becker have shown that with a well designed curriculum and with proper teacher training, almost any physically normal student can learn at a normal rate, even if the student is from a disadvantaged home and is taught in schools located in lower economic neighborhoods (Becker, 1978).

It is the stated goal of the Engelmann-Becker Follow-Through model that every child in their program can achieve during a regular school day (Becker, 1978).

If education is going to obtain this goal, then it will need objective, evaluative feedback on the effects of the existing antecedent and consequent stimuli listed above upon the student's behavior in the classroom.

As of 1970 though, education was only placing one-quarter of one percent of its annual expenditures into research and development, which would include evaluation. This compares with
the four, five and six percent that are expended on research and evaluation by industry, health and agriculture, respectively (Markle, 1976).

As reported by Markle (1976), there is not a great demand to look at any data on the effectiveness of education by educators. She further states that not only can effective data not be sold to educators, it cannot even be given away.

In the area of evaluating curricula, which is the topic of this study, it can be argued following Markle's statements, that (1) educators who select curriculum materials believe that they have the skills to look at an educational program and determine its effectiveness without the need of validation data from the publishers, (2) educators place a great deal of faith in the publishers to develop effective programs and/or (3) educators consider the teachers, not the curriculum, to be the most important variable in instruction.

Yet there are little data which show what skill the people on curriculum selection committees have to select effective educational programs without looking at validation data or which publishers develop programs that when implemented according to their manuals' instructions teach all the students in those programs.

Until recently, there has not been pressure put on publishers by either school districts or by legislatures to evaluate the effectiveness of instructional programs in classrooms.
This may have been due to the confidence the general public (including legislatures) had in educators and publishers of educational materials and also perhaps because of a lack of commitment to the right of all students to be educated in the best way possible. As a result, the majority of the instructional programs currently used in schools have never been tested and evaluated with even a representative sample of the students for whom the programs are intended (Markle, 1976). The DISTAR programs, developed by Siegfried Engelmann and other educators, are an exception to this statement (Becker, 1978).

Between 1972 and 1976, some states, including California, have passed laws mandating that publishing companies test the effectiveness of their programs (Thiagarajan, 1976a). As of 1976 though, these laws were not being implemented in these states because (1) there was still no demand from the consumers of the programs for this type of data and (2) the cost of validating an instructional program using large groups of students was very high (Markle, 1976).

With the implementation of U.S. Public Law 94-142, all states that receive federal monies for educating handicapped students will have to review the specific educational progress of each handicapped student. If the progress of these students is exceptionally slow, even though the students are receiving a more individualized education, schools may feel more pressure from parents and parent groups to use educational curricula that
have been proven effective. It is also possible to foresee in
the near future that procedures mandated by P.L. 94-142
(developing individualized educational plans, annual review of
progress using more than one type of evaluation procedure, etc.)
may be extended to all students whereupon each school could be
held accountable for the educational progress of every student
in the system. One result of this might be pressure from school
boards on publishers to develop and validate programs so that
every child will learn as long as the program is implemented
properly.

As for now, Markle (1976) suggests that concerned educators
try to prompt publishers to at least test their programs with
small representative groups of students. This type of testing
could still yield useful data on the program's effectiveness yet
at a lower cost to the publishers.

Programmed instruction is one type of educational curriculum
that has been of interest to educators such as Engelmann (1975b)
and Markle (1969) and behavior analysts such as Skinner (1961)
and Holland (1972).

Programmed materials have been used to teach many subjects
in schools, industry and the armed forces. These materials are
available in (1) written text, in which the learner must respond
to the material by writing his or her answer to the questions
and then receive confirmation or correction of the answers in
written form; (2) machines, such as in computer assisted instruction
in which the learner composes or selects his or her responses to a question presented on a computer screen after which the computer gives guided feedback for confirmation or correction; and (3) scripted form, in which a teacher presents material to a student or group of students who usually respond vocally to the teacher's questions followed by the teacher's confirmation or corrective feedback.

The characteristics of programmed instruction are:

1. The material presented requires no more than prerequisite skills of the learner.

2. The material teaches all the necessary component skills of the final objective in incremental and cumulative steps so that the learner makes minimal errors.

3. The learner actively responds to the program's questions in written, typed or gestural form or vocally.

4. The learner receives immediate feedback or correction on the appropriateness of his or her response.

5. When the program is presented in text or as part of a teaching machine, the learner can proceed through the program at his or her own pace. This is also true when a program is presented by a teacher vocally to one student. When a program is presented vocally to a group of students by the teacher with the group responding in unison, the rate of the group's progress through the program is dependent upon the slowest
learner if each student is to have similar skills when they have completed the program (Becker, Engelmann and Thomas, 1975b; Pipe, 1966; Skinner, 1961).

There are two general types of programming forms. The first kind is the linear form. Here, the learner usually composes his or her response and all learners respond to the same frames. The second kind is called a branching form. In this form, the learner often selects a response from a given list and if wrong, he or she is put through a remedial or branching loop in the program to remediate the material on the subject just covered. Therefore in a branching program, and unlike a linear program, one learner does not necessarily read the same frames as other learners using the program.

Evaluating programmed texts, or learner verification and revision (LVR), is a four step procedure for testing initial or intermediate versions of programmed texts in which the revisions are based only on the data from the evaluation results. This is in direct opposition to some of the common, non-empirical practices that are currently used by publishers to validate and revise their programs, such as: (1) verification without revision, (2) revision without verification and (3) verification and non-contingent revision (Thiagarajan, 1976a, 1976b).

The four steps of the LVR model include:

1. Appraisal by an expert on the subject matter.
2. Testing the program with individuals from the target
population.
3. Testing the program with small groups of students from
the target population.
4. Testing the program with large groups of students from
the target population.

Each step in this model is usually followed by a revision
of the text based on the data from each evaluation.

The first step of the LVR model, which is to have a first
draft of the program appraised by an expert or experts on the
subject matter, could provide information to the programmer on
(1) the necessity of including or eliminating preskills and/or
component skills in the program, (2) the nature of the target
population for the program, (3) the procedures used in the
program and (4) the instructional language (Thiagarajan, 1976a).

The second step, which involves actually using the program
with individuals from the target population, could provide
information on the programming procedures (e.g. sequencing,
size of incremental steps) as well as which additional prompts
need to be included or which concepts or operations need further
prerequisite skills preparation in the program. Markle (1967)
suggests that the program in this step use as few prompts as
possible and Thiagarajan (1976a) suggests that five to ten
individual tryouts be done using different students with each
tryout.
The third step of LVR, which this study implements, involves using the program with two or more small groups of students from the target population in a naturalistic setting. The first small group used is given an entrance test to measure the prerequisite skills they need to use the program. Next, the students who pass the entrance test are given the program to use along with pre- and posttest measures. Then, an error pattern analysis is made using the pretest and posttest scores to evaluate what was learned from the program by each student between the tests and also to measure the percentage of students who passed each evaluative item. For each posttest item in which mastery was not achieved by a certain percent of students, a revision of the part of the text teaching that skill is made. Although criteria for mastery vary depending on the skills taught and the student, the conventional criterion for each concept and operation is 90%. Therefore, if 90% or more of the students pass an item testing a particular concept or operation, the sequence of the text teaching that skill is not changed (Brown, 1976; Espich and Williams, 1967; Thiagarajan, 1976a). The rationale of revising the text is: if a large enough percentage of students do not achieve mastery on an evaluative item, it is usually the fault of the programmer and not the student.

Revising a program could involve the following tasks: using fewer or more prompts, fading the prompts sooner or later in a sequence of frames teaching a skill, providing fewer or more
examples and/or non-examples of the concepts or operations, using different types of programming formats or sequences, adding illustrations, providing branching or remedial loops, simplifying the language (using shorter words and/or sentences), redefining the target population or even aborting the program (Markle, 1969; Thiagarajan, 1976a). It is important that the revisions be made on the basis of the data and not on the intuitions of the programmer. It is also important that the value of the revision techniques themselves be evaluated on the basis of data and not intuition.

After the program is revised, a second group is selected from a population similar to the first group, given an entrance test and then given the revised text along with pre- and posttest measures. An error pattern analysis is then made between the second group's pretest and posttest. Another analysis is made between the second and first groups' posttest scores. This second analysis can provide information on the effectiveness of the revised program in comparison to the original one. Further revisions can then be made and other small groups can be used to test these revisions until the data show that each evaluative item is being passed by approximately 90% of the students.

The fourth step of LVR consists of field or validation testing of the program with a large number of students from the target population, including control groups. The testing and revision procedures mentioned in the third step of LVR could
also be used here. With a larger sample from the population however, more accurate information could be obtained on the program's general effectiveness.

This study will implement a developmental or small group testing procedure as described in the third step of the LVR model. A high school introductory business class will be used to gather data to make an error pattern analysis of a linear programmed text written by this author. The program attempts to teach concepts and operations related to locating and defining information on a stock market listing similar to a listing of stocks found in a newspaper (Wall Street Journal) and using this information to calculate the cost of transactions involving the stocks listed. This data will then be used in revising the program. The testing procedure will be repeated with another high school introductory business class using the revised text. The differences between the pretest and posttest measures within each group and between the posttest measures for each group will be analyzed to determine the effectiveness of the original and revised programs.
METHOD

Subjects and Setting

Two high school introductory business classes participated in this study. Both classes contained ninth and tenth graders and were in separate schools in the same intermediate school district in southwest Michigan. The first class had nineteen, and the second, twenty-four students. Both classes met for fifty minutes, five days per week, in the morning.

Text

All of the students read through and composed responses in a linear, programmed text. The main goal of the program was to teach the students how to locate and define information found on a common stock listing similar to a listing found in a daily newspaper and then to use this information to compute the cost of transactions involving the buying and selling of the listed stocks.

The following procedure using the suggestions of Becker, Engelmann and Thomas (1975b), Markle (1969) and Pipe (1967) was followed in preparing the text:

1. A target population was selected. For this text, the target population was introductory business students in a high school with limited or no knowledge about
the stock market.

2. The objectives for the program were written and sequenced in the order of their being introduced in the program. The objectives were placed in an order to match the left to right sequence of information found on a stock market listing. The student was usually asked to define a term then locate a number in a column with the term as a heading. After the student was taught these skills, he or she was taught how to compute transactions involving the information taught previously (see Appendix A for a complete list of the thirty-one objectives and the frames in which each objective was taught).

3. For objectives in which the student was asked to define a term in the revised program, the student was usually:
   a. Given the definition of the term.
   b. Asked to identify examples of the term and/or asked to fill in blanks in a sentence restating the definition.
   c. Asked to write the definition.

4. For objectives in which the student was asked to locate information in a listing in the revised program, the student was usually:
a. Told where the information is usually found.
b. Given a sample listing of stocks containing the information and told where the information was located.
c. Asked to locate the information in another listing.

5. For objectives in which the student was asked to compute a math problem in the revised program, the student was usually:
   a. Given a definition of how to compute the problems in words.
   b. Given an example of the problem in mathematical terms.
   c. Asked to compute a problem given some prompts.
   d. Asked to compute a problem without any prompts (see Appendices B, C and D for examples of frame sequences teaching all three of these types of objectives).

The original program used with the first class contained sixty-four frames. The revised program used with the second class contained ninety frames (see Appendix E for the revised program). Each frame usually consisted of one statement to which the student was asked to respond. The answer to each frame was given on the following page preceding the next frame in the sequence.
Evaluation Materials

Every student in both classes was given (1) an entrance test, (2) a pretest and (3) a posttest.

The entrance test was used to assess some of the preskills of the students needed to successfully complete the program but that were not taught in the program. It was believed that to teach these skills (i.e. horizontal multiplication and division problem solving skills) would have made the program too long and also that most of the students for whom the program was written would already have these skills.

The text consisted of six horizontal mathematical problems: three multiplication problems (5.00 \times 100, 7.50 \times 50, 10.00 \times 20) and three division problems (400.00 \div 20.00, 2.00 \div 4, 2.00 \div 20.00). The mathematical examples and problems in the text were presented horizontally. A student had to correctly solve two of three problems in each category to pass the entrance test.

Using the Fry (1968) readability formula and graph, the readability level of the text was appraised at approximately the beginning seventh grade. It was assumed that the students had the necessary reading skills to decode and comprehend the reading material but this was based only upon the recommendation of each teacher.

The pretests and posttests contained identical items but the order in which the questions were asked was varied between
the pretest and posttest. Neither knowledge of results nor copies of the test were given to the students after the pretest. The questions were at the knowledge and application level of Bloom's taxonomy (Bloom, 1956). There was one evaluation item for each objective. Although Pipe (1967) and Becker and Engelmann (1976) recommend that two to three evaluation items be used for each objective, time constraints in the classroom did not allow for this.

Procedure

Before the students in both classes took the entrance exam, they read and composed responses in another programmed text which attempted to teach what businesses are, what common stock, bonds and dividends are, why businesses issue stock and how to buy stock. Each student in this current study completed at least 95% of the frames in this text (Schwartz, 1978). There were no common objectives between this and the text used in the current study.

The students in the first class to use the program in the current study were given an entrance exam and a pretest near the end of one class period. They were given thirty minutes to complete the tests.

The class was then given the original programmed text written by the author to read and respond to during the next three class periods (150 minutes). The directions for using the text were
written on the first page of the program and were also read to the class by the teacher. During the class period the teacher walked among the students to see if they were using the text. The programs were collected by the teacher at the end of each class period.

At the beginning of the fifth day, the students were given a posttest to complete in thirty minutes.

A comparative analysis was made between the pretest scores and the posttest scores of the students who passed the entrance test and completed 95% of the frames in the text. A revision of the text was made for each part of the program which taught a particular objective when fewer than 89% of the students did not pass the evaluative item of the posttest for that objective.

In revising the text, corrections were first based upon error patterns in the posttest when they were apparent. Otherwise, revisions were based upon giving the students more practice in answering questions pertaining to the objectives and/or changing or simplifying the language (using shorter words and sentences).

The second class was also given the entrance test and pretest on one day to complete in thirty minutes, the revised text to read and respond to during three consecutive days and the posttest on the fifth day to complete in thirty minutes.

A comparative analysis was then made between the posttest scores of the first and second class' students who passed the
entrance exam and completed 95% of the frames in the text.

During the class periods used for testing and for using the program, there were no other persons in the room other than the students and the teacher. Both teachers were contacted each day after class to check on the progress of the students. The procedure was implemented in each classroom during five consecutive days.

Data Collection

An error pattern analysis chart was used to record the test data. The chart, using ordinary graph paper, was made by putting the number of the objectives across the top of the chart in the order presented in the program. The students' identification numbers were listed down the left side. For recording pretest data, a circle was placed in the box corresponding to the objective number and the student number if the student correctly answered a particular question. If a student made a correct response to a question on the posttest, an 'X' was placed in the corresponding box. One chart was used for each class.

After all the pretest and posttest data were recorded, a summary chart was made of each student's total test scores by counting the circles and X's in each horizontal row and another chart was made of the percentage of students who correctly answered each pretest and posttest question by counting the circles and X's in each vertical column and dividing each by
the total and multiplying by 100.

Reliability

Two people independently corrected each entrance test, pretest and posttest. One person was the author who wrote the answer key to each test before it was corrected. Correct answers given on the students' tests which were not on the answer key were marked as being correct. Reliability for each test question was computed using the percent occurrence/non-occurrence reliability formula. That is, the number of student responses which both checkers marked as correct or which both checkers marked as incorrect divided by the total number of student responses for that question times 100.

The reliability checkers also counted the number of frames in each program in which an appropriate response was at least attempted. Reliability for each program was computed using the percent agreement formula. That is, taking the two checkers' scores of the frames completed, dividing the smaller by the larger and multiplying by 100.
RESULTS

Reliability

Reliability data on the entrance tests yielded a mean of 100%. Reliability data on the pretests and posttests for both classes yielded a mean of 98.4% with a range from 89% to 100%. Reliability data on the number of frames completed in the text for both classes yielded a mean of 97.3% with a range of 95% to 100%.

First Class

Eighteen of the nineteen students in the first class passed the entrance test. The mean score on the entrance test for these eighteen students, which contained six items, was 4.5 (standard deviation = .70, range = 4 - 6). All eighteen of the students completed at least 95% of the frames in the original text. The mean number of frames completed was 62 of a possible 64 (96.8%). The range of the number of frames completed was from 61 to 64.

Table 1 presents the pretest and posttest raw scores for individuals in the first class and the gain score for each student from the pretest to the posttest. Both tests contained thirty-one items.

The mean pretest score was 7.17 (S.D. = 5.02, range = 2 - 16).  

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Table 1: Pretest and posttest raw scores and gain scores by first class using original text.
Table 1
Pretest and posttest raw scores and gain scores by first class using original text.

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\[ \bar{X} = 7.17 \quad \bar{X} = 20.94 \quad \bar{X} = 13.77 \]
\[ S.D. = 5.02 \quad S.D. = 5.69 \quad S.D. = 4.66 \]
\[ \text{Range} = (2-16) \quad \text{Range} = (9-27) \quad \text{Range} = (7-23) \]

Note: Maximum raw score = 31.
The mean posttest score was 20.94 (S.D. = 5.69, range = 9-27). The mean gain score (posttest score minus pretest score) was 13.77 (S.D. = 4.66, range = 7-23).

Table 2 presents the number and percent of students in the class who correctly answered each evaluative item on the original text's pretest and posttest, and the gain score for each item from the pretest to the posttest.

Only one item on the pretest was passed by 89% (sixteen of eighteen students) or more of the students. This was the test item for objective 2 which was passed by 100% of the students.

Eight test items on the posttest were passed by 89% or more of the students. These were the items for objectives 1, 2, 10, 17, 18, 20, 22 and 24.

Every item but one of the thirty-one test items had more students correctly answer the posttest presentation of the item than the pretest presentation. The gain scores for these thirty items ranged from 1 to 17 (18 being the highest possible). The only item in which the pretest and posttest score did not change was the item for objective 2 which 100% of the students passed on the pretest and on the posttest.

Text Revision

Twenty-three of thirty-one frame sequences which taught an objective were revised. That is, all were revised except the eight sequences in which 89% or more of the class past the posttest item.
Table 2. Number and percent of students correctly answering evaluative items on original text's pretest and posttest.
Table 2

Number and percent of students correctly answering evaluative items on original text's pretest and posttest

<table>
<thead>
<tr>
<th>Evaluative Item Number</th>
<th>Pretest Raw Score and Percent Score</th>
<th>Posttest Raw Score and Percent Score</th>
<th>Gain Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7 - 39%</td>
<td>18 - 100%</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
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</tr>
<tr>
<td>4</td>
<td>0 - 0%</td>
<td>8 - 44%</td>
<td>8</td>
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<td>4 - 22%</td>
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<td>19</td>
<td>0 - 0%</td>
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<td>20</td>
<td>9 - 50%</td>
<td>17 - 94%</td>
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</tbody>
</table>
Table 2 (Cont.)

<table>
<thead>
<tr>
<th>Evaluative Item Number</th>
<th>Pretest Raw Score and Percent Score</th>
<th>Posttest Raw Score and Percent Score</th>
<th>Gain Score</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>31</td>
<td>1 - 6%</td>
<td>11 - 61%</td>
<td>10</td>
</tr>
</tbody>
</table>

Note: Maximum raw score per item = 18.

Evaluative item number corresponds to objective number.
There were three general types of revisions made. For the frame sequences teaching objectives 6, 7, 9, 27, 28, 29, 30, and 31, where computing a multiplication or division problem was always involved, a frame with an additional mathematical problem with prompts was inserted before the final frame of the particular sequence.

For the frame sequences teaching objectives 3, 8, 12, 14, 15, 16, 21 and 23, where the student was asked to either define a term or answer a question involving more than one word in the response, additional frames were added to the sequences giving the students more practice in filling in blanks with restatements of a definition or rule or in identifying more examples of each. In four of the frame sequences, the language of the frame was changed using more common words, shorter words or shorter sentences.

For the frame sequences teaching objectives 4, 5, 11, 13, 25 and 26, where the student was asked to answer a question with one word, locate information in a listing of stocks, or compute a simple mathematical problem involving subtraction of whole numbers, either more practice was given within a frame to locate information or solve a subtraction problem or a review frame was inserted later in the program. In the type of revision, the language of the frames was not changed nor were their problems added using different types of prompts that were not already in the original frame sequence.
There were three posttest items (for objectives 3, 5, and 13) in which an error pattern was apparent on the posttest. These will be described in the Discussion section. The other posttest items' answers did not reveal any apparent error pattern. The frame sequences which taught the objectives which were mastered by 89% or more of the students were not revised except for grammatical corrections. The revised text contained ninety frames compared to the original text's sixty-four.

Second Class

Eighteen of the twenty-four students in the second class passed the entrance test. The mean score on the entrance test for these eighteen students was 5.1 (S.D. = .80, range = 4 - 6). All eighteen of the students who passed the entrance test completed at least 95% of the frames in the revised text. The mean number of frames completed was eighty-seven of a possible ninety (96.7%). The range of completed frames was from 86 to 90.

Table 3 presents the pretest and posttest raw scores for individuals in the second class and the gain score for each student from the pretest to the posttest. Again, each test contained thirty-one items.

The mean pretest score was 16.28 (S.D. = 5.26, range = 2 - 23). The mean posttest score was 25.78 (S.D. = 2.96, range = 20 - 31). The mean gain score (posttest score minus
Table 3. Pretest and posttest raw scores and gain scores by second class using revised text.
Table 3
Pretest and posttest raw scores and gain scores by second class using revised text

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Pretest Raw Score</th>
<th>Posttest Raw Score</th>
<th>Gain Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14</td>
<td>27</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>18</td>
<td>14</td>
<td>20</td>
<td>6</td>
</tr>
</tbody>
</table>

\[
\bar{X} = 16.28 \quad \bar{X} = 25.78 \quad \bar{X} = 9.5 \\
S.D. = 5.26 \quad S.D. = 2.96 \quad S.D. = 5.39 \\
Range = (2-23) \quad Range = (20-31) \quad Range = (2-24)
\]

Note: Maximum raw score = 31.
pretest score) was 9.5 (S.D. = 5.39, range = 2 - 24).

Table 4 presents the number and percent of students in the second class who correctly answered each evalutative item on the revised text's pretest and posttest, and the gain score for each item from the pretest to the posttest.

Three items on the pretest were passed by 89% or more of the students. These were items testing objective 1, 2, and 17. Five more items were passed by 83% or fifteen of the students. These were items 18, 20, 22, 24, and 25.

Eighteen items on the posttest were passed by 89% or more of the students. These were items testing objectives 1, 2, 3, 10, 11, 12, 17, 18, 19, 20, 21, 23, 24, 25, 28, 29, 30 and 31.

Twenty-eight of the thirty-one items on the posttest had more correct student answers per item than on the pretest presentation of the item. These gains ranged from 1 to 14. Three of the thirty-one items had fewer correct answers on the posttest than on the pretest. These were items testing objectives 5, 7 and 22, which were passed by two, one and three fewer students, respectively, on the posttest.

Table 5 presents data from the original and revised text's posttests.

Seven of the eight items which were passed by 89% or more of the students using the original text were also passed by 89% or more of the students using the revised text. These were items testing objectives 1, 2, 10, 17, 18, 20 and 24.
Table 4. Number and percent of students correctly answering evaluative items on revised text's pretest and posttest.
Table 4

Number and percent of students correctly answering evaluative items on revised text's pretest and posttest

<table>
<thead>
<tr>
<th>Evaluative Item Number</th>
<th>Pretest Raw Score and Percent Score</th>
<th>Posttest Raw Score and Percent Score</th>
<th>Gain Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16 - 89%</td>
<td>18 - 100%</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>17 - 94%</td>
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<tr>
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<td>14 - 78%</td>
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<td>3 - 17%</td>
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<td>Item Number</td>
<td>Pretest Raw Score and Percent Score</td>
<td>Posttest Raw Score and Percent Score</td>
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<td>16 - 89%</td>
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</table>

Note: Maximum raw score per item = 18.

Evaluative item number corresponds to objective number.
Table 5. Number and percent of students correctly answering evaluative items on original and revised texts' posttests.
Table 5
Number and percent of students' correctly answering evaluative items on original and revised texts' posttests

<table>
<thead>
<tr>
<th>Evaluative Item Number</th>
<th>Original Text's Posttest</th>
<th>Revised Text's Posttest</th>
<th>Gain Score</th>
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<td>8 - 44%</td>
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<td>7 - 39%</td>
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<tr>
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<table>
<thead>
<tr>
<th>Evaluative Item Number</th>
<th>Original Text's Posttest</th>
<th>Revised Text's Posttest</th>
<th>Gain Score</th>
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<tr>
<td>31</td>
<td>11 - 61%</td>
<td>16 - 89%</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: Maximum raw score per item = 18.

Gain score = revised score minus original score.

Evaluative item number corresponds to objective number.
The item testing objective 22, which was passed by 89% of the students from the first class, was passed by only 67% of the students in the second class. Eleven items were passed by 89% or more of the students in the second class but were passed by fewer than 89% of the students in the first class. These were the items testing objectives 3, 10, 12, 19, 21, 23, 25, 28, 29, 30 and 31.

Twenty-four of the thirty-one items had more correct student answers from the second class than from the first class. The range of these gains for these twenty-four items was from 1 to 9 more students answering correctly per item.

Five items showed no change between the two posttests. Four of these items were passed by 100% of the students in both classes. These were the items testing objectives 1, 2, 17 and 24. The item testing objective 7 was passed by 22% of the students in both classes.

Two items were passed by fewer students in the second class than in the first class. These were the items testing objectives 20 and 22 which were passed by 1 and 4 fewer students in the second class, respectively.

The teachers from both classes reported that all of the students who passed the entrance test completed the three tests and the programmed text within the set time limits.
Cost

The total cost of the printing of the material for the first class, which included the three tests and the text (36 pages) was $10.98.

The total cost of printing the material for the second class, including the tests and text (48 pages) was $17.22. The total cost of printing materials for the study was $28.09.
DISCUSSION

The purpose of a small group, developmental testing procedure is to gather data on the effectiveness of educational programs, yet at a low cost to the producers of the programs. The data from this type of procedure can only suggest which programming or revising procedures are effective due to the absence of (1) control groups, (2) randomization in the sampling procedures and (3) the relatively small size of the groups used in the evaluation. These three procedures are usually employed in the verification step following the testing procedure implemented in this study. Such studies tend to be more costly though because of the inclusion of such procedures. The use of only one evaluation item per objective per test as in this study also makes conclusions difficult to state with confidence.

From the results of the first class' pretest, it would appear that this class had few skills related to what was taught in the program. Their posttest scores though show that each student had substantially higher scores on the posttest than on the pretest, suggesting that the text taught each student at least some new skills.

Eight of the thirty-one items on the posttest were passed by 89% or more of the students in the first class, or sixteen
of eighteen students. Five of these items required that the student locate information on a listing of stocks; two required the student to change stock prices into dollar and cents numbers or vice versa; and one required a one word response to a question. One of these items was correctly answered by all eighteen students on the pretest. All eight of these items were taught in only twelve frames in the original text, therefore it appears that the objectives mastered were at a relatively low level of difficulty. The objectives that were not mastered usually required more complex responses from the students such as defining a term or computing the cost of a stock transaction. Thirty of the thirty-one test items did have more correct student answers on the posttest than on the pretest. The other item had the same percent of correct answers (100%).

Of the twenty-three posttest items that were not passed by 89% or more of the students, three showed apparent error patterns in the students' wrong answers. The item which tested objective 3 required the student to write how often a stock dividend is usually paid in one year. In the original text, the student was told that a dividend is paid four times a year or every three months. The answer for all three of the students who incorrectly answered this question was that a stock dividend was usually paid three times a year. It would appear that the 'three' referring to 'every three months' acted to block the stimulus control of 'four' in 'four times a year,' resulting in fragments of both
statements being combined into an incorrect response of 'three times a year.' In the revised text, any reference to the dividend being paid every three months was deleted and the error pattern was not present on the second class' posttest.

The second error pattern involved the test item for objective 13 which required the student to locate and write down the volume of a stock. On a stock page listing, the volume of a stock is listed in 'hundreds' with the heading of the column reading 'Volume of Sales (100's).'. Therefore, if a stock had a volume of sales of 3,600, the paper would list it as 36. The students were required though to write down the volume including the hundreds. The answer from five of six students who incorrectly answered the question left out the hundreds in their response. In the revised text, the students were given more practice to write down the volume of a stock after locating it in a listing. This item was passed by 67% of the students in the first class and 83% of the students in the second class with no error pattern in the incorrect answers.

The third error pattern involved objective 5 which required the student to write down how much money he or she would receive from dividend payments for one year from one share of a certain stock. In seven of the thirteen incorrect responses, the students computed the money they would receive from a quarterly dividend payment which involved adding one more step (dividing by four) to the operation. In the revised text, a review frame
was inserted near the end of the program giving the students more practice on the skill. This strategy was not successful though in reducing the number of incorrect responses or in decreasing the error pattern. A possible further revision strategy would be to teach the student to more thoroughly discriminate between a yearly and quarterly dividend payment in successive frames and possibly to review the discrimination later in the program.

For the remaining twenty frame sequences that were revised but for which no error patterns were apparent, the revisions usually consisted of giving the students more practice on a skill (1) within the same number of frames as the original sequence, (2) on frames added to the original sequence or (3) on review frames added later in the program. A few changes were also made in terms of using different or shorter words or sentences within a frame and in correcting grammatical errors (e.g. spelling, punctuation).

Twenty-six frames were added to the revised text increasing the number of frames in the program from sixty-four to ninety. This increased the ratio of frames per objective from two-to-one to approximately three-to-one. Since there were twenty-three frame sequence changes, about one new frame was added to each sequence making the changes relatively minor. This procedure of making small changes in the program follows the procedure of using as few prompts and examples in the original program as
possible. The rationale would be that the educator should try to teach as much as possible in as short of time as possible.

The data on the pretest given to the second class suggest that this class had many more skills related to stock market concepts and operations than the first class. The mean score of the second class' students on the pretest was more than nine points higher than the first class' score. Three of the pretest items were correctly answered by 89% or more of the students in the second class while another five items were correctly answered by 83% of the students. In comparison, the first class' pretest had only one item which was answered by 83% or more of the students.

The mean posttest score of the second class was five points higher than the first class' score although the mean gain score from the pretest to the posttest was lower than the first class' score. The data from the second class' scores also show that for all but one of the students, the posttest scores were substantially higher than the pretest scores. The data suggest that a total of ten additional objectives were effectively taught to students using the revised text, raising the total to eighteen.

Four of these objectives required defining terms and four others required the student to compute the cost of stock transactions. This suggests that the revised program was also more effective in teaching concepts and operations which required higher level responses from the students, although the greater
initial familiarity with the material by the second class may also account for these gains.

The posttest item for objective twenty-three, which required the student to locate and write down the low price of a stock and which was passed by 89% of the students in the first class, was passed by only 67% of the students in the second class. This objective was very similar to three others which required the student to locate and write down the high price, closing price and change in price of a stock. All three of these items were passed by 89% or more of the students in the second class. An analysis of the posttest answers showed that the students either wrote down the closing price of the same stock, which appears after the high and low price, or wrote down the low price of another stock with the same initial letter. With this type of equivocal data from the two classes, further revisions of the text would not include changing this frame sequence until more data could be obtained on its general effectiveness.

Twenty-eight of the thirty-one items on the second class' posttest had more correct answers per item than on the pretest. Three items had fewer correct answers. In comparing the combined posttest scores of both classes, twenty-four items had more correct answers per item on the second posttest than on the first posttest, five items had the same number of correct answers (of which four were answered by 100% of both classes) and two items had fewer correct answers. This suggests that the students in
the second class had more skills related to the objectives after reading the program than did the first class. This could be due to either the increased effectiveness of the revised program and/or to the higher entry skills of the second class.

There were four students from the second class and one student from the first class who failed the entrance exam but still took each test and completed 95% of the frames. The posttest scores of the four students in the second class put them at the bottom of the class while the student in the first class had the third lowest score in the class. This suggests that the entrance test was an efficient screening device. Two other students in the second class failed the entrance test and also failed to complete 95% of the frames.

It appears that the testing procedure implemented in this study could be effective in gathering data on other types of texts other than the programmed text. The programmed text though does make revisions easier because the placement and sequence of the skills taught in the program are sharply defined by the use of frames. By developing scope and sequence charts that Becker and Engelmann (1977) describe, revising basal programs could be feasible. This will probably only be done by publishers and educators though after sufficient public pressure is applied.

The teacher in the first class gave a questionnaire to his nineteen students after they had taken the posttest. The
questions asked about the student likes and dislikes regarding the programmed text and how they would improve it. Seventeen of the nineteen students had mostly positive things to say about the program. Some of the things mentioned were that you could go at your own pace, it was individualized and it was different from anything the class had done before but you still learned a lot. One of the students stated that although the program was boring, it was not as boring as having to listen to the teacher lecture everyday. Of the two students who made only negative comments, one stated that she just did not like anything to do with the stock market and the other stated that the program was boring. Most of the statements about improving the program regarded giving the students more practice on problems within the program. The teacher stated that he also liked the program and would like to use the revised text in his class for the next school year. Although the teacher of the second class did not make any negative statements about the program, he was not as enthusiastic about it as the first teacher.

In summary, a small group, low cost, developmental testing procedure was implemented and provided useful data on the effectiveness of a programmed text teaching thirty-one stock market concepts and operations to two high school introductory business classes. A revision of the text, which was based on posttest measures from the first class to use the text, appeared to be more effective in teaching certain concepts and operations.
than the original text. However, definite conclusions cannot be made because of the differences between the two groups' pretest measures and the relatively small groups used. Further revision of at least twelve more frame sequences is needed as shown by the posttest data from the second class.
REFERENCES


Appendix A. List of objectives.
Appendix A. List of objectives.

This is a list of the objectives for the programmed text in the order of their introduction in the program. The numbers following the objectives are the frames in which the skills were taught in the original program and in the revised program.

The student will:

1. Write how often stock prices are listed in the newspaper. (1-3) (1-3)
2. Underline a company name in a stock listing. (4-5) (4-5)
3. Write how often a stock dividend is usually paid during one year. (6-7) (6-7, 10)
4. Write what type of dividend payment this is called. (7-9) (7-10)
5. Given a listing of stocks, write how much money he or she will receive from the dividend payments for one year from one share of stock. (10) (11, 71)
6. Given a listing of stocks, write how much money he or she will receive from the dividend payments for one year from any number of stock shares of one company. (11-12) (12-14)
7. Given a listing of stocks, write how much money he or she will receive from a quarterly dividend payment from any number of stock shares of one company. (13-16) (15-19)
8. Write the definition for the yield of a stock. (17-20) (20-24)
9. Calculate the yield of a stock given the price of the stock share and the price of the dividend. (21-22) (25-27, 30)

10. Given a listing of stocks, locate and write down the yield of a stock. (23-24) (28-29)

11. Given a listing of stocks and a bank interest rate, select and write down which stocks in the list give a higher percentage of return for his or her investment than the bank. (25-27) (31-34, 70)

12. Write the definition for the volume of a stock. (28-30) (35-38)

13. Given a listing of stocks, locate and write down the volume of a stock. (31) (39-40)

14. Write what the price of a share of stock can do. (32) (41-43)

15. Write why the price of a stock share would go up. (33) (44-46)

16. Write why the price of a stock share would go down. (34) (47-49)

17. Given an equality chart of fractions and decimals, change a stock price into a dollar and cents number. (35) (50)

18. Given an equality chart of fractions and decimals, change a dollar and cents number into a stock price. (36) (51)

19. Write the definition for the high price of a stock. (37-39) (52-56)
20. Given a listing of stocks, locate and write down the high price of a stock. (40) (57)

21. Write the definition for the low price of a stock. (41-43) (58-61)

22. Given a listing of stocks, locate and write down the low price of a stock. (44) (62)

23. Write the definition for the closing price of a stock. (45-47) (63-66)

24. Given a listing of stocks, locate and write down the closing price of a stock. (48) (67)

25. Given a chart with the closing prices of stocks for two consecutive days, compute the change in price for a stock. (49) (68)

26. Given a listing of stocks, locate and write down the change in price of a stock. (50) (69)

27. Given a listing of stocks, compute the cost of buying a certain amount of stock shares. (51-52) (72-74)

28. Given a listing of stocks, compute the amount of money he or she would receive from selling a certain amount of stock shares. (53-54) (75-77)

29. Given a listing of stocks and a certain amount of money, compute how many shares of a certain stock he or she could buy. (55-56) (78-80)

30. Given a listing of stocks, a certain number of shares and the price of one of those shares when first bought, compute
the profit from selling those shares. (57-60) (81-85)

31. Given a listing of stocks, a certain number of shares and the price of one of those shares when first bought, compute the loss from selling those shares. (61-64) (86-90)
Appendix B. Frame sequence teaching a definition.
Appendix B. Frame sequence teaching a definition.

Objective 19: The student will write the definition for the high price of a stock.

Frame 53.

The high price of a stock is always the highest price the stock sold for on one day. For example: A stock sold for $49.00, $48.25 and $48.00 on one day. The high price of that stock would be $49.00 for that one day.

If a stock sold for $23.75, $23.83 and $24.00 on one day, what would be the high price for that one day?

$___.___

Answer to Frame 53.

$24.00

Frame 54.

A stock sold for $8.50, $8.75 and $8.00 on one day. The sale at $8.75 was the __________ price for that one day.

Answer to Frame 54.

high
Frame 55.

The high price of a stock is the __________ price the stock sold for on one day.

______________________________

Answer to Frame 55.

highest

______________________________

Frame 56.

What is the highest price of a stock for one day?

Put answer here: ________________________________

______________________________

______________________________

______________________________

______________________________.

______________________________

Answer to Frame 56.

The highest price the stock sold for on one day.
Appendix C. Frame sequence teaching locating skill.
Appendix C. Frame sequence teaching locating skill.

Before this particular sequence, the student has already been taught how to locate the dividend, yield, volume and high price of a stock.

Objective 22: Given a listing of stocks, the student will locate and write down the low price of a stock.

Frame 62.

The low price of a stock is listed after the high price for that stock. For example: The low price of the Farber Company would be listed as:

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield Pct.</th>
<th>Volume of Sales (100's)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farber Co.</td>
<td>.10</td>
<td>10</td>
<td>637</td>
<td>10 1/2</td>
<td>9 1/4</td>
</tr>
</tbody>
</table>

The low price for the Farber Company being 9 1/4, or by using Chart J on page 4, $9.25.

Using the listing below, list the dividend, yield, volume, high and low price for the Underhill Company Stock.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield Pct.</th>
<th>Volume of Sales (100's)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Co.</td>
<td>.05</td>
<td>5</td>
<td>54</td>
<td>11 1/4</td>
<td>8</td>
</tr>
<tr>
<td>Underhill Co.</td>
<td>.25</td>
<td>4</td>
<td>343</td>
<td>12</td>
<td>10 1/2</td>
</tr>
<tr>
<td>Underwear Co.</td>
<td>.10</td>
<td>10</td>
<td>9</td>
<td>15</td>
<td>5 1/4</td>
</tr>
</tbody>
</table>
Answer to Frame 62.

Dividend $0.25, Yield 4%, Volume 34,300, High Price $12.00, Low Price $10.50
Appendix D. Frame sequence teaching computing cost of transaction.
Appendix D. Frame sequence teaching computing cost of transaction.

The chart in frames 73 and 74 to which the student is referred (Chart Z), is a listing of nine stocks with all the information contained on a stock page listing.

Objective 27: Given a listing of stocks, the student will compute the cost of buying a certain amount of stock shares.

Frame 72.

To find out the total cost of buying a certain number of shares of stock, you multiply the price of one share of that stock times (X) the number of shares that you want to buy.

For example: The price of one share of the BBC Company costs $5.00. You want to buy 10 shares. The total cost of buying the 10 shares = $5.00 X 10 = $50.00.

The price of one share of the Albright Light Company costs $10.00. How much would it cost you to buy 20 shares?

Total Cost = Price of 1 share X the number of shares you want to buy.

= $____.___ X _____________ shares
= $

Answer to Frame 72.

$10.00 X 20 = $200.00
Frame 73.

Use Chart Z on page 25 for the following problem.

What would be the total cost of buying 20 shares of the Children's Flower Company at its closing price?

Total Cost = Price of 1 share \times \text{the number of shares you want to buy}.

= \$\_\_._\_ \times \_\_\_\_\_\_ \text{shares}

= \$\_\_._\_

Answer to Frame 73.

\$70.00 \times 20 = \$1,400.00

Frame 74.

Use Chart Z on page 25 for the following problem.

What would be the total cost of buying 5 shares of the Soiled Earth Shoe Company at its closing price?

Put answer here: \$\_\_._\_

Answer to Frame 74.

\$5.00 \times 5 = \$25.00
Appendix E. Revised program.
Frame 1.

As you learned in Part 1, stock is ownership in a company and is worth a certain amount of money. The amount of money that a stock share is worth is called the stock price.

Stock prices are usually listed in the newspaper everyday. This is called a daily listing. If a stock price is listed in Monday's paper, the next day it would be listed would be ____. 

Answer to Frame 46.

The price of a stock would go up because the company sold more products than it did the year before.

Frame 47.

One reason why the price of a stock would go down is because the company sold less products this year than they did the year before. For example: The Rasputin Snake Service Company sold fewer products this year than they did the year before. The price of the stock was also lower this year than the year before.

For which of the following companies would the price of one share of stock probably go down in 1977?

<table>
<thead>
<tr>
<th>Company</th>
<th>Sales of Products in 1976</th>
<th>Sales of Products in 1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hasbro Co.</td>
<td>$4,098,767</td>
<td>$7,989,545</td>
</tr>
<tr>
<td>Brinks Co.</td>
<td>$3,333,454</td>
<td>$1,000,090</td>
</tr>
<tr>
<td>Faygo Co.</td>
<td>$9,888,999</td>
<td>$6,939,939</td>
</tr>
</tbody>
</table>

Put answer here: 

____________________

____________________

____________________
Answer to Frame 1.

Tuesday

----

Frame 2.

A stock that is listed in the daily newspaper is listed ______ day.

----

Answer to Frame 47.

Brinks Co. and Faygo Co.

----

Frame 48.

The price of the Blazo Company stock was lower in 1978 than it was in 1977. The reason for this was because the company sold fewer of its _____________ in 1978 than it did in 1977.
Answer to Frame 2.

```
everyday
```

---

Frame 3.

```
How often are the stock prices usually listed in the newspaper?
```

---

Answer to Frame 48.

```
products
```

---

Frame 49.

```
Why would the price of a stock go down?
```

Put answer here: 

---
Answer to Frame 3.
daily or everyday

Frame 4.
The stocks listed in the newspaper are in alphabetical order. For example: You would find the Blitz Beer Company listed after the American Can Company and before the Coca Cola Company as in the listing below.

<table>
<thead>
<tr>
<th>Stock Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Can Co.</td>
</tr>
<tr>
<td>Blitz Beer Co.</td>
</tr>
<tr>
<td>Coca Cola Co.</td>
</tr>
</tbody>
</table>

Put the following stocks in the order that they should be if they were listed in a newspaper:

Correct Order:

<table>
<thead>
<tr>
<th>Stock Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat Exterminators Co.</td>
</tr>
<tr>
<td>Underhill Co.</td>
</tr>
<tr>
<td>Tandy Co.</td>
</tr>
<tr>
<td>Star Co.</td>
</tr>
</tbody>
</table>

Answer to Frame 49.
Because the company sold fewer products this year than the year before.

Chart J - You will use this chart for the next few frames and for frames later in the program. Whenever a frame says to look at Chart J, you should turn to page 70 and look at the chart below.

1 = 1.00
7/8 = .87
3/4 = .75
5/8 = .62
1/2 = .50
3/8 = .37
1/4 = .25
1/8 = .12
Answer to Frame 4.

1. Rat Exterminators Co.
2. Star Co.
3. Tandy Co.
4. Underhill Co.

Frame 5.

Underline the Champion Company in the listing below.

Stock Name
Alphabet Soup Co.
American Hospital Co.
Baby Food Co.
Bright Food Co.
Chad Clothing Co.
Champion Co.
Chart Map Co.
Dart Co.

Frame 50.

The price of one share of stock is listed in the newspaper as a counting number (1, 2, 3, 4, ... 17, 18, 19, ... 108, 109, 110, ...) or as a counting number and a fraction (5 1/4, 6 1/2). To find out what the price of the stock is in dollars and cents, the stock number must be changed. For example: The price of one share of the Arco Oil Company is listed in the paper as 37 1/4. Using Chart J (page 70), this number is changed to $37.25.

Using Chart J, change the following stock prices into dollar and cent numbers.

5 1/4 = $
6 = $
7 1/2 = $
7 5/8 = $
Answer to Frame 5.

Chad Clothing Co.  
Champion Co.  
Chart Map Co.

Your underlining would look like this.

Frame 6.

As you learned in Part 1, dividends are the profits of a company that the stock shareholders get. Dividends are usually paid 4 times a year. If a dividend is paid in January, it will also be paid in April, July and October. If a dividend is paid in March, what other months will it be paid?

List of the months in order:

Put answer here:

January  
February  
March  
April  
May  
June  
July  
August  
September  
October  
November  
December

Answer to Frame 50:

\[ \frac{5}{4} = 5.25 \]  
\[ 7 \frac{1}{2} = 7.50 \]  
\[ 6 = 6.00 \]  
\[ 7 \frac{5}{8} = 7.62 \]

Frame 51.

There may be a chance that you know the dollar and cents price of a stock but must find out the price of a stock as it would be listed in a newspaper. To do this, you must change the dollar and cents number into a counting number of into a counting number and a fraction. For example: The cost of one share of the Lamco Company is $1.62. Using Chart J (page 70), this number would be listed in the newspaper as 1 5/8.

Using Chart J, change the following dollar and cents numbers into stock prices as they would be listed in a newspaper.

\[ $11.50 = \_\_\_\_\_\_ \]  
\[ $6.12 = \_\_\_\_\_\_ \]  
\[ $22.00 = \_\_\_\_\_\_ \]
Answer to Frame 6.

June, September, December

Frame 7.

If a dividend is paid 4 times a year, each time it is paid is called a quarterly dividend payment. A quarterly dividend payment is paid _______ times a year.

Answer to Frame 51.

$11.50 = 11 1/2
$ 6.12 = 6 1/8
$22.00 = 22

Frame 52.

Since a stock price can change during one day, any stock will have a high, low and closing price for one day. Go to next frame.
Answer to Frame 7.

4 or four

Frame 8.

If a dividend is paid in February, May, August and November, each time it is paid is called a q__________ payment.

Frame 53

The high price of a stock is always the highest price the stock sold for on one day. For example: A stock sold for $49.00, $48.25 and $48.00 on one day. The high price of the stock would be $49.00 for that one day.

If a stock sold for $23.75, $23.83 and $24.00 on one day, what would be the high price for that one day?

$____.:____.
Answer to Frame 8.

quarterly

Frame 9.

What is a dividend payment called if it is paid 4 times a year?

____________

Answer to Frame 53.

$24.00

Frame 54.

A stock sold for $8.50, $8.75 and $8.00 on one day. The sale at $8.75 is the __________ price for that one day.
Answer to Frame 9

quarterly

Frame 10.

How often is a stock dividend usually paid during one year? _________________

What is this kind of dividend payment called? ________

Answer to Frame 54.

high

Frame 55.

The high price of a stock is the _________________ price the stock sold for on one day.
Answer to Frame 10.

4 or four times
A quarterly payment

Frame 11.

In the newspaper, the dividend of a stock is listed right after the name of the stock. This number is the amount of money you would receive for one year if you owned one share of stock. For example: The dividend for the Ford Motor Company would be listed as:

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ford Motor Co.</td>
<td>2.60</td>
</tr>
</tbody>
</table>

This listing means that if you owned one share of Ford Motor Company stock, you would receive $2.60 in dividend payments for one year.

Using the listing below, list the dividend payments that you would receive for one year if you owned one share of the Baby Food Company and one share of the Chart Map Company.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Co.</td>
<td>.40</td>
</tr>
<tr>
<td>Baby Food Co.</td>
<td>.37</td>
</tr>
<tr>
<td>Champion Co.</td>
<td>.50</td>
</tr>
<tr>
<td>Chart Map Co.</td>
<td>2.09</td>
</tr>
</tbody>
</table>

Put answer here:

Baby Food Company dividend = $_____.
Chart Map Company dividend = $_____

Answer to Frame 55.

highest

Frame 56.

What is the high price of a stock for one day?

Put answer here: ____________________________
Answer to Frame 11.

Baby Food Co. dividend = $0.37  
Chart Map Co. dividend = $2.09

Frame 12.

The amount of money that you will get from dividend payments for 1 year from owning any number of shares of a company's stock can be found by using the following formula:

The price of the dividend listed in the newspaper times (X) the total number of shares that you own equals (=) the money you get for 1 year.

For example: The dividend of the Alphabet Soup Company is $0.40 for one share of stock for one year. You own 20 shares of the stock. The money you would get from the dividend payments for one year = $0.40 X 20 = $8.00

Suppose you own 10 shares of the Faygo Pop Company. The company pays a dividend of $1.00 for one year for one share of stock. How much money would you get from the dividend payments for the one year for the 10 shares?

Dividend price X number of shares you own = the money you will get.

$____.____ X ________________ shares = $____.____

Answer to Frame 56.

The highest price the stock sold for on one day.
The high price for a stock is listed after the volume of the stock. For example: The high price of the Sweet Sugar Company would be listed as:

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield</th>
<th>Volume of Sales (100's)</th>
<th>High Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweet Sugar Co.</td>
<td>.10</td>
<td>10</td>
<td>59</td>
<td>10 1/2</td>
</tr>
</tbody>
</table>

The high price for the Sweet Candy Company being 10 1/2, or by using Chart J on page 70, is $10.50.

Using the listing below, list the dividend, yield, volume and high price for Ralph's Sport Car Company.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield</th>
<th>Volume of Sales (100's)</th>
<th>High Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ralco Co.</td>
<td>.09</td>
<td>10</td>
<td>789</td>
<td>9 1/4</td>
</tr>
<tr>
<td>Ralph's Sport Car Co.</td>
<td>.05</td>
<td>5</td>
<td>69</td>
<td>11 1/4</td>
</tr>
<tr>
<td>Rayco Co.</td>
<td>.15</td>
<td>20</td>
<td>987</td>
<td>8</td>
</tr>
</tbody>
</table>

Put answer here:

<table>
<thead>
<tr>
<th>Div.</th>
<th>Yield</th>
<th>Volume</th>
<th>High Price (use Chart J)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$___</td>
<td>___%</td>
<td>______</td>
<td>$<em><strong>.</strong></em></td>
</tr>
</tbody>
</table>
Answer to Frame 12.

$1.00 \times 10 = $10.00

Frame 13.

Use the list below for this problem.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hairglo Co.</td>
<td>1.00</td>
</tr>
<tr>
<td>Shine and Dine Co.</td>
<td>0.70</td>
</tr>
<tr>
<td>Telequick Co.</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Suppose you own 10 shares of the Shine and Dine Company stock. How much money would you get from the dividend payments for one year.

\[
\text{Dividend price} \times \text{number of shares you own} = \text{the money you will get.}
\]

\[
\underline{0.70} \times \underline{10} = \underline{7.00}
\]

Answer to Frame 57.

Dividend = $0.05  
Yield = 5%  
Volume = 6900  
High Price = $11.25

Frame 58.

The low price of a stock is always the lowest price the stock sold for on a single day. For example: A stock sold for $12.00, $11.50 and $12.50 on one day. The low price for that stock would be $11.50 for that one day.

If a stock sold for $8.12, $8.50 and $8.00 on one day, what would be the low price for that day?

\[
\underline{8.00}
\]
Frame 14.

Use this list for answering the following question.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fargo Cargo Co.</td>
<td>2.00</td>
</tr>
<tr>
<td>Faygo Pop Co.</td>
<td>1.00</td>
</tr>
<tr>
<td>Fazio Bowling Co.</td>
<td>.70</td>
</tr>
</tbody>
</table>

Suppose you own 100 shares of the Fargo Cargo Company. How much money would you get from the dividend payments for one year? Show your work.

Put answer here. $____.____

Answer to Frame 58.

$8.00

Frame 59.

A stock sold for $102.75, $103.00, $104.50 and $104.00 on one day. The sale at $102.75 is the _____________ price for that one day.
Answer to Frame 14.

$2.00 \times 100 = $200.00

Frame 15.

The amount of money that you would get from a quarterly dividend payment from owning one share of stock – the amount of the dividend for the year ÷ (divided by) 4.

For example: The Fine Food Company pays a dividend of $8.00 for each share of its stock for one year. The quarterly dividend payment for one share = $8.00 ÷ 4 = $2.00.

The Locust Bee Company pays a yearly dividend of $20.00. What would be its quarterly dividend payment?

Dividend for one year ÷ 4 = the quarterly dividend payment for one share:

$____.____ ÷ 4 = $____._____

Answer to Frame 59.

low

Frame 60.

The low price of a stock is the ___________ price the stock sold for on one day.
Answer to Frame 15.

$20.00 \div 4 = 5.00$

________________________________________________________

Frame 16.

Use this list for answering the following problem.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locust Bee Co.</td>
<td>2.00</td>
</tr>
<tr>
<td>Lurch High Co.</td>
<td>1.57</td>
</tr>
<tr>
<td>Luznur Co.</td>
<td>.80</td>
</tr>
<tr>
<td>Mororless Co.</td>
<td>.67</td>
</tr>
</tbody>
</table>

What would be the quarterly dividend for the Luznur Company for one share?

Put answer here $____.____

________________________________________________________

Answer to Frame 60.

lowest

________________________________________________________

Frame 61.

What is the low price of a stock?

Put answer here: ________________________________

________________________________________________________
Answer to Frame 16.

\[ 0.80 \div 4 = 0.20 \]

Frame 17.

The money you get from a quarterly dividend if you own any number of shares of stock can be found by using the following formula:

\[ \text{(The number of shares you own } \times \text{ the dividend price)} \div 4 = \text{the money you would get. You do the calculations in the parentheses ( ) first.} \]

For example: The dividend of the Soil Company is $2.00 and you own 100 shares. The money you would get for a quarterly dividend payment = \( \left( \frac{2.00 \times 100}{4} \right) \]

\[ = \left( \frac{200.00}{4} \right) = 50.00 \]

Suppose you own 10 shares of the Standard Oil Company stock and the stock pays a dividend for one year of $4.00. How much money would you get from the quarterly dividend payment?

\[ \text{(The dividend price } \times \text{ the number of shares you own)} \div 4 = \text{the money you will get} \]

\[ \left( \frac{\text{____.______ } \times \text{ ________shares}}{4} \right) = \text{____.______} \]

Answer to Frame 61.

The lowest price the stock sold for on one day.
The low price for a stock is listed after the high price for that stock. For example: The low price of the Farber Company would be listed as:

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield</th>
<th>Pct.</th>
<th>Sales (100's)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farber Co.</td>
<td>.10</td>
<td>10</td>
<td></td>
<td>637</td>
<td>10 1/2</td>
<td>9 1/4</td>
</tr>
</tbody>
</table>

The low price for the Farber Company being 9 1/4, or by using Chart J on page 70, $9.25.

Using the listing below, list the dividend, yield, volume, high and low price for the Underhill Company stock.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield</th>
<th>Pct.</th>
<th>Sales (100's)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Co.</td>
<td>.05</td>
<td>5</td>
<td></td>
<td>54</td>
<td>11 1/4</td>
<td>8</td>
</tr>
<tr>
<td>Underhill Co.</td>
<td>.25</td>
<td>4</td>
<td></td>
<td>343</td>
<td>12</td>
<td>10 1/2</td>
</tr>
<tr>
<td>Underwear Co.</td>
<td>.10</td>
<td>10</td>
<td></td>
<td>9</td>
<td>15</td>
<td>5 1/4</td>
</tr>
</tbody>
</table>

Put answer here:

<table>
<thead>
<tr>
<th>Dividend</th>
<th>Yield</th>
<th>Volume</th>
<th>High Price</th>
<th>Low Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>$<strong><strong>.</strong></strong></td>
<td>____%</td>
<td>_____</td>
<td>$<strong><strong>.</strong></strong></td>
<td>$<strong><strong>.</strong></strong></td>
</tr>
</tbody>
</table>

Answer to Frame 17.

\[ \frac{(4.00 \times 10)}{4} = \]  
\[ \frac{(40.00)}{4} = 10.00 \]
Frame 18.

Use the list below for this problem.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcove Co.</td>
<td>1.00</td>
</tr>
<tr>
<td>Bella Co.</td>
<td>0.60</td>
</tr>
<tr>
<td>Caller Co.</td>
<td>0.70</td>
</tr>
<tr>
<td>Dorpos Co.</td>
<td>1.20</td>
</tr>
</tbody>
</table>

What would be the quarterly dividend payment if you owned 20 shares of the Alcove Company stock?

\[
\text{Dividend price} \times \text{the number of shares you own} \div 4 = \text{the money you will get}
\]

\[
($_____\text{.____} \times \text{__________ shares}) \div 4 = $_____\text{.____}
\]

---

Answer to Frame 62.

Dividend $0.25  Yield 4%  Volume 34,300  
High Price $12.00  Low Price $10.50

---

Frame 63.

The closing price of a stock is the price of a stock share at the last sale of the day for that stock. For example: The Nancy Company sold on one day for $5.75, $5.50, $6.00 and $5.83, in this order. The closing price would be $5.83.

If a stock sold for $6.00, $7.00 and $8.00, in this order on one day, what would be the closing price?

$_____._____

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Answer to Frame 18.

\[
\frac{($1.00 \times 20)}{4} = \frac{($20.00)}{4} = $5.00
\]

Frame 19.

Use this list for answering the following question.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search Co.</td>
<td>8.00</td>
</tr>
<tr>
<td>Soil Co.</td>
<td>2.00</td>
</tr>
<tr>
<td>Standard Oil</td>
<td>4.00</td>
</tr>
<tr>
<td>Standard Toil</td>
<td>.01</td>
</tr>
</tbody>
</table>

What would be the quarterly dividend payment if you owned 20 shares of the Search Company stock? Show your work.

Put answer here. $_____._____

Answer to Frame 63.

$8.00

Frame 64.

On one day, a stock sold for $12.50, $13.00 and $12.00 in this order. The sale at $12.00 is the _____________ price for that stock for one day.
Answer to Frame 19.

\[
\begin{align*}
(8.00 \times 20) \div 4 &= \ $160.00 \\
$160.00 \div 4 &= \ $40.00
\end{align*}
\]

Frame 20.

The dividend money you get from your shares of stock is called the return on your investment. In order to get a return for your stock investment, the company that sells the stock must pay a dividend to the stockholders.

Answer to Frame 64.

last or closing

Frame 65.

The closing price of a stock is the price the stock sold for on one day.
Answer to Frame 20.

dividend

Frame 21.

Some companies pay a higher rate of return for your stock investment. For example: Both the Alzor and Blazor Companies' stock sell for $10.00. The Alzor Company pays a $1.00 dividend for one share of stock for one year. The Blazor Company pays a $1.50 dividend for one share of stock for one year. The Blazor Company pays a higher rate of return for your stock investment.

Both the Ford Motor Company and the Scott Fetzer Company sell for $35.00 for one share of stock. The Ford Motor Company pays a dividend of $4.00 and the Scott Fetzer Company pays a dividend of $2.50. Which company pays a higher rate of return for your investment?

Answer to Frame 65.

last

Frame 66.

What is the closing price of a stock?

Put answer here ___________________________________________
Frame 22.

Not all companies cost the same amount of money for one share though. To compare the companies' rates of return with each other, we must find the yield of each stock. The yield is the percentage of return from your stock dividend payments. To find out what the yield is, you must find the product of your stock dividend payments.

Answer to Frame 66.

The last price the stock sold for on one day.

Frame 67.

The closing price of a stock would be listed in a newspaper after the low price of a stock. For example: The closing price of the Danger Company would be listed as:

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield</th>
<th>Pct.</th>
<th>Sales (100's)</th>
<th>High</th>
<th>Low</th>
<th>Closing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danger Co.</td>
<td>10</td>
<td>10</td>
<td></td>
<td>753</td>
<td>11</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

The closing price for the Danger Company being 10 or by using Chart J on page 70, $10.00.

Using the listing below, list the dividend, yield, volume, high, low and closing price for the Rococo Company stock.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Pct.</th>
<th>Sales (100's)</th>
<th>High</th>
<th>Low</th>
<th>Closing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Co.</td>
<td>1.00</td>
<td>5</td>
<td>76</td>
<td>22 1/2</td>
<td>18 1/4</td>
<td>20</td>
</tr>
<tr>
<td>Roan's Co.</td>
<td>.50</td>
<td>10</td>
<td>4403</td>
<td>5 1/4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Rococo Co.</td>
<td>2.00</td>
<td>20</td>
<td>400</td>
<td>11 1/2</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

Put answer here:

<table>
<thead>
<tr>
<th>Dividend</th>
<th>Yield</th>
<th>Volume</th>
<th>High</th>
<th>Low</th>
<th>Closing</th>
</tr>
</thead>
<tbody>
<tr>
<td>$____.</td>
<td>____%</td>
<td>______</td>
<td>$____</td>
<td>$____</td>
<td>$____</td>
</tr>
</tbody>
</table>

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Answer to Frame 22.

percentage of return

Frame 23.

If a company pays a dividend, and you find what the percentage of return is for the stock, you can find the

Answer to Frame 67.

Dividend $2.00 Yield 20% Volume 40,000
High $11.50 Low $9.00 Closing $10.00

Frame 68.

When listed in the newspaper, the change in a stock price is the difference between the listed closing price and the previous day's closing price.

For example: The closing price of the Nicklaus Company stock in yesterday's paper was 34. The closing price in today's paper was 35. The price change would be listed in today's paper as +1.

The closing price of the Smearo Company was 14 in yesterday's paper and was 12 in today's paper. The price change would be listed in today's paper as -2.

The closing price of the Ace Company was 10 in yesterday's paper and was 10 in today's paper. The price change would be listed in today's paper as -- or 0.

What would be the price changes of the following stocks?

<table>
<thead>
<tr>
<th>Stock</th>
<th>Closing Price April 1</th>
<th>Closing Price April 2</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Co.</td>
<td>40</td>
<td>42</td>
<td>+2</td>
</tr>
<tr>
<td>CBS Co.</td>
<td>36</td>
<td>30</td>
<td>-6</td>
</tr>
<tr>
<td>NBC Co.</td>
<td>8</td>
<td>8</td>
<td>--</td>
</tr>
<tr>
<td>Ode Co.</td>
<td>10</td>
<td>10</td>
<td>--</td>
</tr>
<tr>
<td>POP Co.</td>
<td>16</td>
<td>14</td>
<td>--</td>
</tr>
<tr>
<td>RLD Co.</td>
<td>5</td>
<td>7</td>
<td>--</td>
</tr>
<tr>
<td>TAT Co.</td>
<td>19</td>
<td>18</td>
<td>--</td>
</tr>
</tbody>
</table>
Answer to Frame 23.

yield

__________________________________________________________

Frame 24.

What is the yield of a stock?

Put answer here: ____________________________________________

__________________________________________________________

__________________________________________________________

Answer to Frame 68.

Ode Co. -- RLD Co. +2
POP Co. -2 TAT Co. -1

__________________________________________________________

Frame 69.

The price change of a stock is listed in a newspaper after the closing price. For example: The price change of the OKAY Company would be listed as:

Yield Volume of
Stock Div. Pct. Sales (100's) High Low Closing Change
Okay Co. .01 1  2 1 1/2 1 1  +1/4

The price change for the OKAY Company being + 1/4, or by using Chart J on page 70, $0.25.

Using the listing below, list the dividend, yield, volume, high, low and closing price and price change for the Compton Camera Company.

Yield Volume of
Stock Div. Pct. Sales (100's) High Low Closing Change
Carson Cloth Co. .05 2 56 10 1/2 8 10 +1
Compton Camera Co .10 5 900 3 1/4 1 1/4 2 + 1/2
Cover Co .40 10 44 5 3 4 +2

Put answer here:

Dividend Yield Volume High Low Closing Change
$____ $____ % _____ $___ $___ $___ _____

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Answer to Frame 24.

The percentage of return from your stock dividend payments.

Frame 25.

The yield of a stock = the price of the dividend ÷ the price of the stock. For example: One share of the VEP Company costs $20.00. It pays a dividend of $1.00. The yield = $1.00 ÷ $20.00 = .05 = 5% (See table below to find out how to change a decimal into a percent number.)

**Decimal to Percent Table**

<table>
<thead>
<tr>
<th>Decimal</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>.01</td>
<td>1%</td>
</tr>
<tr>
<td>.10</td>
<td>10%</td>
</tr>
<tr>
<td>.45</td>
<td>45%</td>
</tr>
<tr>
<td>1.00</td>
<td>100%</td>
</tr>
</tbody>
</table>

What is the yield of the IBM Company stock if one share sells for $200.00 and the dividend is $8.00?

Yield = Price of dividend ÷ Price of one share

Yield = $___.___ ÷ $___.___. = ____%

Answer to Frame 69.

<table>
<thead>
<tr>
<th>Dividend</th>
<th>Yield</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.10</td>
<td>5%</td>
<td>90,000</td>
</tr>
<tr>
<td>$3.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$0.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>High</th>
<th>Low</th>
<th>Closing</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3.25</td>
<td>$1.25</td>
<td>$2.00</td>
</tr>
</tbody>
</table>

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Chart Z - You will use this chart for some of the frames that follow. Whenever a frame says to look at Chart Z, you should turn to page 94 and look at the chart below.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield Pct.</th>
<th>Volume of Sales (100's)</th>
<th>High</th>
<th>Low</th>
<th>Closing</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albright Light Co.</td>
<td>1.00</td>
<td>10</td>
<td>56</td>
<td>11</td>
<td>9</td>
<td>10</td>
<td>+1</td>
</tr>
<tr>
<td>Broken</td>
<td>.10</td>
<td>2</td>
<td>42</td>
<td>6 1/4</td>
<td>5</td>
<td>5</td>
<td>+1/2</td>
</tr>
<tr>
<td>Children's Flower Co.</td>
<td>.70</td>
<td>1</td>
<td>9</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>--</td>
</tr>
<tr>
<td>Hinge Door Co.</td>
<td>.60</td>
<td>1</td>
<td>76</td>
<td>62</td>
<td>59</td>
<td>60</td>
<td>-2</td>
</tr>
<tr>
<td>Nash Potato Co.</td>
<td>.80</td>
<td>20</td>
<td>8</td>
<td>4 1/4</td>
<td>3 1/2</td>
<td>4</td>
<td>+1/4</td>
</tr>
<tr>
<td>Piece Pipe Fitting Co.</td>
<td>.20</td>
<td>2</td>
<td>200</td>
<td>10 1/2</td>
<td>9</td>
<td>10</td>
<td>+1</td>
</tr>
<tr>
<td>Slipshod Banana Importers</td>
<td>.30</td>
<td>5</td>
<td>36</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>-1/4</td>
</tr>
<tr>
<td>Soiled Earth Shoes Co.</td>
<td>.50</td>
<td>10</td>
<td>49</td>
<td>7 1/4</td>
<td>4</td>
<td>5</td>
<td>+1</td>
</tr>
<tr>
<td>Vader Mask Co.</td>
<td>.90</td>
<td>20</td>
<td>64</td>
<td>5</td>
<td>4</td>
<td>4 1/2</td>
<td>--</td>
</tr>
</tbody>
</table>
Answer to Frame 25.

$8.00 ÷ $200.00 = .04 = 4$

Frame 26.

The cost of one share of the Liquid Elixer Company is $30.00. The company pays a dividend of $1.50. What is the yield of the stock?

\[
\text{Yield} = \frac{\text{Price of dividend}}{\text{Price of one share}}
\]

\[
\text{Yield} = \frac{\$1.50}{\$30.00} = \%
\]

Frame 70.

Your bank pays an interest rate of 7%. Which stocks listed on Chart Z on page 94 pay a higher percentage of return for your investment?

Put answer here:

____________________

____________________

____________________

____________________

____________________
Answer to Frame 26.

\[ \frac{1.50}{30.00} = 0.05 = 5\% \]

Frame 27.

One share of the Altex Clothing Company costs $50.00. The company pays a dividend of $10.00. What is the yield of the stock?

Put answer here: \( \underline{\phantom{0}} \% \)

Answer to Frame 70.

Albright Light Co. Soiled Earth Shoes Co.
Nash Potato Co. Vader Mask Co.

Frame 71.

Use Chart Z on page 94 for the following problem.

How much money would you get from the dividend payments for one year if you owned 1 share of the Hinge Door Company and 1 share of the Vader Mask Company?

Put answer here:

Dividend payment from Hinge Door Co. = $\underline{\phantom{0}}.\underline{\phantom{0}}$

Dividend payment from Vader Mask Co. = $\underline{\phantom{0}}.\underline{\phantom{0}}$
Answer to Frame 27.

$10.00 \div $50.00 = .20 = 20\%$

Frame 28.

The yield of a stock is not changed by the number of shares that you own. Suppose you own 1 share of the Ramco Company that pays a dividend with a 7% yield. If you bought 100 more shares of that stock when it was selling at the same price as when you bought it before, what would be the yield?

Put answer here ____________%

Answer to Frame 71.

Hinge Door Co. $0.60
Vader Mask Co. $0.90

Frame 72

To find out the total cost of buying a certain number of shares of stock, you multiply the price of one share of that stock \( \times \) the number of shares that you want to buy.

For example: The price of one share of the BBB Company costs $5.00. You want to buy 10 shares. The total cost of buying the 10 shares = $5.00 \( \times \) 10 = $50.00.

The price of the Albright Light Company costs $10.00. How much would it cost you to buy 20 shares?

Total Cost = Price of 1 share \( \times \) the number of shares you want to buy

= $____.____ \( \times \) ____________ shares

Total Cost = $____.____
Frame 29.

The yield of a stock is sometimes listed right after the dividend of a stock in a newspaper listing. It is listed as a percent. For example: The yield of the No Fail Brake Company would be listed as:

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Fail Brake Co.</td>
<td>.37</td>
<td>4</td>
</tr>
</tbody>
</table>

The yield of the No Fail Brake Company being 4%.

Use the listing below for the following problem. List the dividend and yield for the Comton Camera Company.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse Material Co.</td>
<td>.07</td>
<td>4</td>
</tr>
<tr>
<td>Comton Camera Co.</td>
<td>1.67</td>
<td>11</td>
</tr>
<tr>
<td>Cousin's Clothing</td>
<td>.56</td>
<td>8</td>
</tr>
</tbody>
</table>

Put answer here:

Dividend Yield

$____.____  ___%$

Answer to Frame 72.

$10.00 \times 20 = $200.00$

Frame 73

Use Chart Z on page 94 for the following problem. What would be the total cost of buying 20 shares of the Children's Flower Company at its closing price?

Total Cost = Price of 1 share $\times$ the number of shares you want to buy

$= $____.____ $\times$ _______ shares

Total Cost

$= $____.____
Answer to Frame 29.

Dividend $1.67   Yield 11%

Frame 30.

The Daykstra Company sells for $20.00 for one share of stock and pays a $2.00 dividend. What is its yield?

Yield = ______ %

Which stocks below have a higher yield than the Daykstra Company?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Co.</td>
<td>.67</td>
<td>12</td>
</tr>
<tr>
<td>CBS Co.</td>
<td>.10</td>
<td>5</td>
</tr>
<tr>
<td>NBC Co.</td>
<td>.98</td>
<td>15</td>
</tr>
</tbody>
</table>

Put answer here:  

Answer to Frame 73.

$70.00 X 20 = $1,400.00

Frame 74.

Use Chart Z on page 94 for the following problem.

What would be the total cost of buying 5 shares of the Soiled Earth Shoe Company at its closing price?

Put answer here: $____.____
Answer to Frame 30

Yield = 10%
Companies with a higher yield: ABC Co. and NBC Co.

Frame 31.

The percentage of return from your stock dividend (the yield) can be compared with other percentages of returns from other investments. Your bank interest rate is a percentage of return from your putting money in the bank. This bank interest rate can be compared with the yield from your stock dividend.

Answer to Frame 74.

$5.00 \times 5 = $25.00

Frame 75.

To find out how much money you will get from selling some shares of stock, you multiply the number of shares sold times (X) the cost of one share of that stock at the time that you sold it.

For example: You have sold 20 shares of the Armco Company stock and the cost of one share of stock at the time that you sold it was $20.00. The amount of money that you will get from this sale = 20 \times $20.00 = $400.00.

You have just sold 100 shares of the Vader Mask Company when it was selling at $4.00 for one share. How much money would you get from this sale?

The money you get = Number of shares sold \times \text{the cost of one share at the time of the sale.}

= \underline{\hspace{2cm}} \text{shares} \times \underline{\hspace{2cm}}$

The money you get = \underline{\hspace{2cm}}$
Frame 33.

Use the list below for the following problem.

Your bank pays an interest rate of 6%. Which of the companies in the list below pay a higher percentage of return for your investment than the bank interest rate?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Food Co.</td>
<td>.98</td>
<td>5</td>
</tr>
<tr>
<td>Cashew Nut Co.</td>
<td>1.00</td>
<td>8</td>
</tr>
<tr>
<td>Cashout Bank</td>
<td>.01</td>
<td>2</td>
</tr>
<tr>
<td>Cedar Chest Co.</td>
<td>.99</td>
<td>4</td>
</tr>
<tr>
<td>City Sofa Co.</td>
<td>.76</td>
<td>7</td>
</tr>
</tbody>
</table>

Put answer here:

Cashew Nut Co.
Answer to Frame 33.

Cashew Nut Co. and City Sofa Co.

Frame 34.

Use the listing below for the following problem.

Your bank pays an interest rate of 5%. Which of the
companies in the list below pay a higher percentage of return
for your investment than the bank interest rate?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCO</td>
<td>.10</td>
<td>5</td>
</tr>
<tr>
<td>Clark Oil</td>
<td>.98</td>
<td>6</td>
</tr>
<tr>
<td>Mobil Oil</td>
<td>.76</td>
<td>4</td>
</tr>
<tr>
<td>Shell Oil</td>
<td>.01</td>
<td>3</td>
</tr>
<tr>
<td>Standard Oil</td>
<td>1.00</td>
<td>7</td>
</tr>
</tbody>
</table>

Put answer here:

Answer to Frame 77.

10 X $62.00 = $620.00

Frame 78.

Sometimes you will have a certain amount of money and may
want to buy some shares of stock of some company. To find out
how many shares you can buy, you divide the amount of money
that you have by the price of one share of the stock that you
want to buy. For example: You have $300.00 and want to buy
some Simco Company stock. The cost of one share of Simco
Company stock is $2.00. The number of shares that you can
buy = $300.00 ÷ $2.00 = 150.

You have $100.00 and want to buy some Broken Arrow Company
stock which is selling at $5.00 for one share. How many shares
can you buy?

Number of shares you can buy = The money you have ÷ the price of
one share

= $____.____ ÷ $____.____

Number of shares you can buy = ________
Answer to Frame 34.

Clark Oil and Standard Oil

Frame 35.

The volume of sales for a stock is the total number of shares of that stock bought or sold for one day. To find the volume of sales of a stock for one day you must know the total number of shares bought or sold on one day.

Answer to Frame 78.

$100.00 \div $5.00 = 20$ shares that you could buy

Frame 79.

Use Chart Z on page 94 for this problem.

You have $200.00 and want to buy some Albright Light Co. stock at its closing price. How many shares can you buy?

Number of shares you can buy = The money you have $\div$ the price of one share

$= \$\ldots \div \$\ldots$

Number of shares you can buy = \ldots
Answer to Frame 35.

bought or sold

Frame 36.

For one day, the Prune Juice Company of America had a volume of sales of 1,000,000 shares. That means that 1,000,000 shares were ______________ or ______________ for that day.

Answer to Frame 79.

$200.00 ÷ $10.00 = 20 shares that you could buy.

Frame 80.

Use Chart Z on page 94 for this problem.

You have $120.00 and want to buy some Slipshod Banana Importers stock at its closing price. How many shares can you buy?

Put answer here: ____________ shares
Answer to Frame 36.

bought or sold

Frame 37.

The volume of shares is the total number of shares _____ or __________ for __________ day.

Answer to Frame 80.

$120.00 \div $6.00 = 20 shares that you could buy.

Frame 81.

The cost of a share of stock can go up, down or stay the same. Therefore, the amount of money you could get from selling stock can be higher or lower than the amount of money that it cost you to buy that stock.

If you sell a stock when its price is higher now than what it was when you bought it, you have made a profit.

To make a profit, the price of the stock must be ______ now than what it was when you bought the stock.
Answer to Frame 37.

 bought or sold for one day

Frame 38.

 What is the volume of a stock?

Put answer here: ________________________________

Answer to Frame 81.

 higher

Frame 82.

 For which of the following stocks would you make a profit if you sold the stock now?

<table>
<thead>
<tr>
<th>Stock</th>
<th>Price when you bought it</th>
<th>Price now</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABA Co.</td>
<td>$37.00</td>
<td>$36.00</td>
</tr>
<tr>
<td>Spud Co.</td>
<td>$17.00</td>
<td>$20.00</td>
</tr>
<tr>
<td>Tuft Co.</td>
<td>$7.00</td>
<td>$7.00</td>
</tr>
</tbody>
</table>

Put answer here:
Answer to Frame 38.

The number of shares bought or sold for one day.

Frame 39.

The volume of sales for a stock is listed after the yield of the stock in the newspaper. The volume of sales is usually listed in hundreds (100's).

For example: The volume of sales for the Ripe Raisen Company would be listed as:

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield Pct.</th>
<th>Volume of Sales (100's)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ripe Raisen Co.</td>
<td>.67</td>
<td>3</td>
<td>45</td>
</tr>
</tbody>
</table>

The '45' in the volume of sales column means that 4500 (45 \* 100) shares of that stock were bought or sold for that one day.

Use the listing below for the following problem.

What would be the total volume of sales for all of the stocks listed below?

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield Pct.</th>
<th>Volume of Sales (100's)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tap and Flap Co.</td>
<td>.89</td>
<td>8</td>
<td>60</td>
</tr>
<tr>
<td>Tee and Flee Co.</td>
<td>.70</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Tie and Fly Co.</td>
<td>.66</td>
<td>22</td>
<td>234</td>
</tr>
</tbody>
</table>

Total volume for:

Tap and Flap 6000 (60 \* 100)
Tee and Flee
Tie and Fly

Answer to Frame 82.

Spud Co.
The profit you can make by selling some stock (when the stock price is higher now than when you bought it) equals the money you would get from selling your stock minus the money it cost you to buy the stock.

For example: You bought 10 shares of the ASP stock when it was selling at $5.00 for one share. This costs you $50.00. The stock is now selling for 11.00 for one share. If you sold your 10 shares now, you would get $110.00. Your profit would equal $110.00 - $50.00 = $60.00.

You bought 10 shares of the Piece Pipe Fitting Company when it was selling at $9.00 for one share. You have just sold your 10 shares when the stock was selling at $10.00 for one share. What was your profit?

Your profit = The money you will get from the sale - the money it cost you to buy the stock.

= $____.____ - $____.____

Your profit = $____.____
Answer to Frame 39.

Tee and Flee volume = 300
Tie and Fly volume = 23,400

Frame 40.

Use the listing below for this problem.
List the dividend, yield and volume of sales for the Ford Company.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Div.</th>
<th>Yield Pct.</th>
<th>Volume of Sales (100's)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chrysler Co.</td>
<td>.70</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Ford Co.</td>
<td>2.60</td>
<td>6</td>
<td>90</td>
</tr>
<tr>
<td>General Motors</td>
<td>3.80</td>
<td>8</td>
<td>760</td>
</tr>
</tbody>
</table>

Put answer here:

<table>
<thead>
<tr>
<th>Dividend</th>
<th>Yield</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>$___ .__</td>
<td>___ %</td>
<td>______</td>
</tr>
</tbody>
</table>

Answer to Frame 83.

$100.00 - $90.00 = $10.00

Frame 84.

Use Chart Z on page 94 for this problem.

You brought 5 shares of the Nash Potato Company when it was selling for $1.00 for 1 share. You have just sold your 5 shares at the closing price. How much profit did you make?

Your profit = The money you will get from the sale - the money it cost you to buy the stock

= $___ .__ - $___ .__

Your profit = $___ .__
Frame 40.

Dividend $2.60  Yield 6%  Volume 9000

Frame 41.

The price of a stock can go up, down or stay the same at any time during the day or throughout the year.
Which of the following statements are not true and why?

a. The price of a stock always goes up.
b. The price of a stock can go up.
c. The price of a stock always stays the same.
d. The price of a stock can go down.
e. The price of a stock always goes down.

Put answer here: ________________________________
______________________________
______________________________
______________________________

Frame 84.

$20.00 - $5.00 = $15.00

Frame 85.

Use Chart Z on page 94 for the following problem.

You bought 10 shares of the Albright Light Company when it was selling at $5.00 for one share. You have just sold your 10 shares at the closing price. How much profit have you made?
Show your work.

Profit = $_______
Answer to Frame 41.

a., c., and e. are not true because the price of a stock can go up, down or stay the same. The price of a stock does not just do one of these things all the time.

Frame 42.

Complete the list below showing what the price of each stock did from June 1 to June 2.

<table>
<thead>
<tr>
<th>Stock</th>
<th>Price on June 1</th>
<th>Price on June 2</th>
<th>What the stock did</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Co.</td>
<td>17</td>
<td>18</td>
<td>Price went up</td>
</tr>
<tr>
<td>CBS Co.</td>
<td>19</td>
<td>18</td>
<td>Price went down</td>
</tr>
<tr>
<td>NBC Co.</td>
<td>16</td>
<td>16</td>
<td>Price stayed the same</td>
</tr>
<tr>
<td>OLD Co.</td>
<td>15</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>POP Co.</td>
<td>14</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>TVT Co.</td>
<td>13</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Answer to Frame 85.

$100.00 - $50.00 = $50.00

Frame 86.

If you sell your stock when the price of one share is lower now than when you bought it, you will take a loss. To take a loss, the price of the stock must be ______________ now than when you bought the stock.
Answer to Frame 42.

OLD Co. Price stayed the same
POP Co. Price went up
TVT Co. Price went down

Frame 43.

What can the price of a stock do?
Put answer here: ________________________________

Answer to Frame 86.

lower

Frame 87.

For which of the following stocks would you take a loss if you sold your stock now?

<table>
<thead>
<tr>
<th>Company</th>
<th>Price of stock when you bought it</th>
<th>Price of stock now</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alco Company</td>
<td>$ 5.00</td>
<td>$ 5.00</td>
</tr>
<tr>
<td>Beezar Company</td>
<td>$ 2.00</td>
<td>$ 1.25</td>
</tr>
<tr>
<td>Flubola Company</td>
<td>$15.00</td>
<td>$10.00</td>
</tr>
</tbody>
</table>

Put answer here:
Answer to Frame 43.

The price of a stock can go up, down or stay the same.

______________________________________________________________

Frame 44.

One reason why the price of a stock would go up is because the company sold more products this year than they did the year before. For example: The Popeye Popcorn Company sold more products this year than they did the year before. The price of the stock was also higher this year than the year before.

For which of the following companies would the price of one share of stock go up in 1977?

<table>
<thead>
<tr>
<th>Company</th>
<th>Sales of Products in 1976</th>
<th>Sales of Products in 1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ginn Co.</td>
<td>$1,656,858</td>
<td>$1,999,999</td>
</tr>
<tr>
<td>H&amp;M Co.</td>
<td>$7,987,655</td>
<td>$1,000,001</td>
</tr>
<tr>
<td>SRA Co.</td>
<td>$3,000,000</td>
<td>$5,987,777</td>
</tr>
</tbody>
</table>

Put answer here: __________

___________

___________

______________________________________________________________

Answer to Frame 87.

Beezar Co. and Flubola Co.

______________________________________________________________

Frame 88.

The loss you would take by selling some stock (when the stock price is lower now than when you bought it) equals the amount of money you spent buying the stock minus the amount of money you will get when you sell the stock.

For example: You bought 2 shares of the Above and Below Company when it was selling at $20.00 for one share. This cost you $40.00. The stock now sells for $1.00 for one share. If you sold your 2 shares now, you would get $2.00. Your loss would equal $40.00 - $2.00 = $38.00.
You bought 5 shares of the Children's Flower Company when the price of one share was $100.00. The stock now sells for $70.00 for one share. How much money would you lose if you sold your 5 shares now?

Your loss = The money it cost you to buy the stock - the money you get from selling the stock.

= $____.____ - $____.____

Your loss = $____.____
Answer to Frame 44.

Ginn Co. and SRA Co.

__________________________________________

Frame 45.

The price of the Alcorn Company stock was higher in 1977 than it was in 1976. This was because the company sold more of its p___________ in 1977 than in 1976.

__________________________________________

Answer to Frame 88.

$500.00 - $350.00 = $150.00

__________________________________________

Frame 89.

Use Chart Z on page 94 for this problem.

You bought 50 shares of the Slipshod Banana Importers when it was selling at $20.00 for one share. You have just sold your 50 shares at the closing price. How much money did you lose?

Your loss = The money it cost to buy the stock - the money you get from selling the stock

= $____.____ - $____.____

Your loss = $____.____
Answer to Frame 45.

products

Frame 46.

Why would the price of a stock go up?

Put answer here: ____________________________

__________________________________________

Go to page 1 for answer.

__________________________________________

Answer to Frame 89.

$1,000.00 - $300.00 = $700.00

__________________________________________

Frame 90.

Use Chart Z on page 94 for this problem.

You bought 20 shares of the Broken Arrow Company when it was selling at $10.00 for one share. You have just sold your 20 shares at the closing price. How much money did you lose?

Your loss = $____.____
Answer to Frame 90.

$200.00 - $100.00 = $100.00

YOU ARE ALL DONE!!!!!!!!

You can now take the posttest. Thanks.