

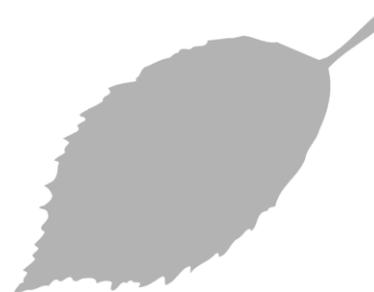
**Massachusetts
Tests for Educator Licensure[®] (MTEL[®])**



**General Curriculum
(103/203)**

PRACTICE TEST

**Version 2
BOOKLET 2
Mathematics Subtest (203)**



Multiple-Choice Question Analyses are provided in a separate appendix document.
See the MTEL web site for more information.

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APPENDIX: Multiple-Choice Question Analyses

Readers should be advised that this practice test, including many of the excerpts used herein, is protected by federal copyright law.

Test policies and materials, including but not limited to tests, item types, and item formats, are subject to change at the discretion of the Massachusetts Department of Elementary and Secondary Education.

INTRODUCTION

This document is a printable version of the Massachusetts Tests for Educator Licensure® (MTEL®) General Curriculum (03) Online Practice Test.

The MTEL General Curriculum test consists of a multi-subject subtest and a mathematics subtest. To pass the General Curriculum test, you must pass both the multi-subject and mathematics subtests.

This practice test for the General Curriculum mathematics subtest is a sample test consisting of 45 multiple-choice questions and 1 open-response item assignment.

To assist you in recording and evaluating your responses on the practice test, a [Multiple-Choice Answer Sheet](#), an [Answer Key Worksheet](#), an [Evaluation Chart](#) by test objective, and [Analyses](#) are included for the multiple-choice questions. A blank [Response Sheet](#), [Evaluation Information](#), and [Sample Responses and Analyses](#), as well as a [Scoring Rubric](#), are included for the open-response item. Lastly, there is a [Practice Test Score Calculation Worksheet](#).

PURPOSE OF THE PRACTICE TEST

The practice test is designed to provide an additional resource to help you effectively prepare for the MTEL General Curriculum (03) test. The primary purpose of the practice test is to help you become familiar with the structure and content of the test. It is also intended to help you identify areas in which to focus your studies. Education faculty and administrators of teacher preparation programs may also find this practice test useful as they help students prepare for the official test.

TAKING THE PRACTICE TEST

In order to maximize the benefits of the practice test, it is recommended that you take this test under conditions similar to the conditions under which the official MTEL tests are administered. Try to take the practice test in a quiet atmosphere with few interruptions and limit yourself to the four-hour time period* allotted for the official test administration. You will find your results to be more useful if you refer to the answer key and/or multiple-choice question analyses only after you have completed the practice test.

INCORPORATING THE PRACTICE TEST IN YOUR STUDY PLAN

Although the primary means of preparing for the MTEL is your college education, adequate preparation prior to taking or retaking the MTEL test is strongly recommended. How much preparation and study you need depends on how comfortable and knowledgeable you are with the content of the test.

The first step in preparing to take the MTEL is to identify what information the test will address by reviewing the objectives for your field. A complete, up-to-date list of the [Test Objectives](#) is included in the [Test Information Booklet](#) for each test field. The test objectives are the core of the testing program and a helpful study tool. Before taking or retaking the official test, focus your study time on those objectives for which you wish to strengthen your knowledge.

* For the Communication and Literacy Skills and General Curriculum tests, candidates may take one or both subtests during the four-hour session.

General Curriculum (03) Practice Test: Mathematics

This practice test may be used as one indicator of potential strengths and weaknesses in your knowledge of the content on the official test. However, because of potential differences in format and difficulty between the practice test and an official MTEL General Curriculum (03) test, it is not possible to predict precisely how you might score on an official MTEL General Curriculum (03) test. Keep in mind that the subareas for which the test weighting is greatest will receive emphasis on this test. Refer to the Test Information Booklet for additional information about how to prepare for the test.

**GENERAL CURRICULUM (03)
PRACTICE TEST
MATHEMATICS SUBTEST**

GENERAL TEST DIRECTIONS

This practice test consists of two subtests: multi-subject (booklet 1) and mathematics (booklet 2). Each multiple-choice question on the practice test has four answer choices. Read each question carefully and choose the ONE best answer. Record each answer on the answer sheet provided.

- Sample Question:
1. What is the capital of Massachusetts?
 - A. Worcester
 - B. New Bedford
 - C. Boston
 - D. Springfield

The correct answer to this question is C. You would indicate that on the answer sheet.

The open-response item assignment on this practice test requires a written response. Directions for the open-response item assignment appear immediately before the assignment.

You may work on the multiple-choice questions and open-response item assignment in any order that you choose. You may wish to monitor how long it takes you to complete the practice test. When taking the actual MTEL General Curriculum (03) test, you will have one four-hour test session in which to complete the test.

Please note that graphic representations included on the test may not be drawn to scale.

MULTIPLE-CHOICE ANSWER SHEET

Mathematics Subtest

Question Number	Your Response
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
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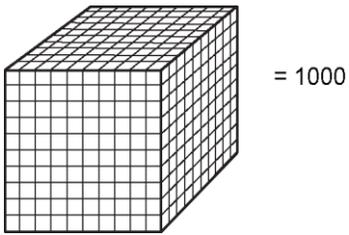
Question Number	Your Response
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	

MULTIPLE-CHOICE QUESTIONS

1. A researcher estimated that there were eight billion grains of sand per cubic meter on one particular beach. If the mass of one of these grains of sand is approximately 3.5×10^{-7} grams, what is the approximate mass of one cubic meter of sand on this particular beach?
 - A. 2.8×10^0 grams
 - B. 2.8×10^1 grams
 - C. 2.8×10^2 grams
 - D. 2.8×10^3 grams

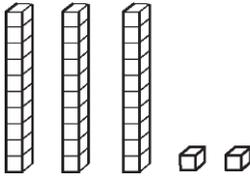
2. If k represents an irrational number, which of the following operations must always result in an irrational number?
 - A. $k + k$
 - B. $k - k$
 - C. $k \times k$
 - D. $k \div k$

3. Use the figure below to answer the question that follows.

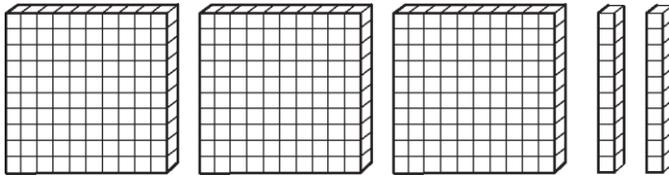


If the figure above represents 1000, which of the following figures represents 302?

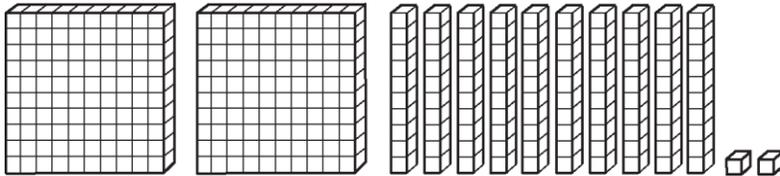
A.



B.



C.



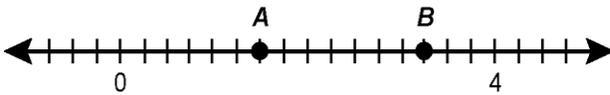
D.



4. The base-10 number 827 is written in base 5 as 11302_5 . What is the base-10 value of the digit 3 in this number?
- A. 25
 - B. 75
 - C. 300
 - D. 375
5. For which of the following pairs of numbers is the number 3.45 larger than the first number, but smaller than the second number?
- A. $\frac{5}{2}$ and $\frac{13}{4}$
 - B. $\frac{13}{4}$ and $\frac{7}{2}$
 - C. $\frac{7}{2}$ and $\frac{15}{4}$
 - D. $\frac{15}{4}$ and $\frac{9}{2}$
6. The owner of a T-shirt shop bought a shipment of shirts, each for the same cost, and sold the shirts at 20% above cost. At the end of the season, the owner sold the remaining shirts at a sale: buy one and get the second shirt for half price. As a result, there was a loss on the sale of each of these shirts. The owner's loss per shirt was what percentage of the original cost?
- A. 10%
 - B. 15%
 - C. 20%
 - D. 25%

7. Which of the following statements involving percentages is true?
- A. A person who has two credit cards paid 50% of the first credit-card bill of \$648 and 45% of the second credit-card bill of \$352. The person paid 95% of the total \$1000 owed.
 - B. A worker received an 8% raise at the end of the first year on the job and another 8% raise at the end of the second year. The worker's total raise was 16% of the starting salary.
 - C. In a particular county, 15% of the population is over 65 years old, 40% is 35 to 65 years old, 30% is 18 to 34 years old, and 20% is under 18 years old.
 - D. A town spent 36% of its annual budget on public safety and 10% on public works projects. The town spent 46% of its annual budget on public safety and public works projects.

8. Use the number line below to answer the question that follows.



Which of the following numbers is located between point A and point B on the number line above?

- A. $\frac{3}{8}$
- B. $\frac{9}{16}$
- C. $2\frac{1}{4}$
- D. $3\frac{1}{2}$

9. Use the problem below to answer the question that follows.

After driving 180 miles, a family had completed $\frac{5}{8}$ of their trip. How many more miles must they drive to complete their entire trip?

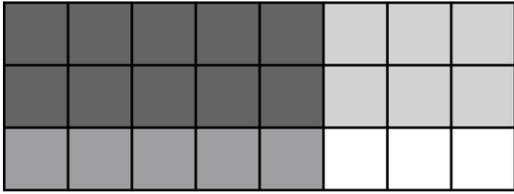
Which of the following expressions models the solution to the problem above?

- A. $\frac{3}{8}(180)$
- B. $\frac{3}{5}(180)$
- C. $\frac{8}{3}(180)$
- D. $\frac{5}{3}(180)$
10. In which of the following lists are the numbers correctly ordered from least to greatest?
- A. 8% , $\frac{2}{5}$, 0.16 , $\frac{3}{8}$
- B. $\frac{1}{8}$, 2.5% , $\frac{1}{4}$, 0.05
- C. 0.9 , $\frac{1}{2}$, 75% , $\frac{3}{5}$
- D. 130% , $\frac{8}{5}$, 2.08 , $\frac{10}{3}$

11. If $a = 2^3 \cdot 3 \cdot 5$ and $b = 2^2 \cdot 3^2 \cdot 7$, what is the result of dividing the least common multiple of a and b by the greatest common factor of a and b ?
- A. 70
 B. 140
 C. 210
 D. 420
12. If m and n are both prime numbers greater than two, then the number represented by $(mn + 1)$ must be:
- A. even.
 B. odd.
 C. prime.
 D. a perfect square.
13. When the number 3600 is written in the form $x^a y^b z^c$, where x , y , and z are prime numbers, what is the value of $a + b + c$?
- A. 5
 B. 6
 C. 8
 D. 10
14. Which of the following statements is enough to confirm that a number N is divisible by 36?
- A. N is divisible by 6.
 B. N is divisible by both 4 and 9.
 C. N is divisible by both 3 and 12.
 D. N is divisible by both 2 and 18.

15. Which of the following problems can be solved by calculating the least common multiple of the given quantities?
- A. A surveyor needs to divide a rectangular plot of land 840 meters wide and 1680 meters long into equally-sized square plots. If the dimensions of the plots need to be whole numbers, what is the size of the largest plots the surveyor can create?
 - B. The environmental action club at a school has 13 girls and 15 boys. Five club members will be chosen to attend a workshop. In how many ways can the five students be chosen if two of them must be girls?
 - C. A jar contains 8 blue marbles, 12 red marbles, and 15 green marbles. If three marbles are drawn together from the jar, what is the probability that each of the three marbles drawn is a different color?
 - D. In a party supply shop, paper plates are sold in packages of 30, cups in packages of 24, and napkins in packages of 36. What is the smallest number of plates, cups, and napkins that can be bought so that there is an equal number of each?

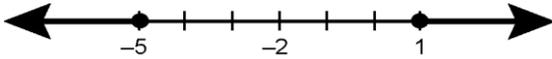
16. Use the diagram below to answer the question that follows.



Which of the following problems can be solved using the operation model shown?

- A. In a bag of marbles, $\frac{5}{8}$ of the marbles are red. In a second bag, $\frac{2}{3}$ of the marbles are blue. If the two bags are combined into one bag, what is the probability of picking a red marble followed by a blue marble, if the red marble is not replaced?
- B. The results of a survey in a third-grade class showed that $\frac{2}{3}$ of the students had at least one pet and that $\frac{5}{8}$ of the students who had pets had at least one dog. What fraction of the class had at least one dog?
- C. There are two pints of milk. A child drinks $\frac{5}{8}$ of one pint and the child's friend drinks $\frac{2}{3}$ of the second pint. What fraction of a pint remains?
- D. One person can do a particular job in $\frac{2}{3}$ of an hour. A second person can do the same job in $\frac{5}{8}$ of an hour. What is the ratio of the first person's time to the second person's time?

17. Use the number line below to answer the question that follows.



Which of the following inequalities best represents the graph shown on the number line?

- A. $|x - 2| \geq 3$
- B. $|x + 2| \geq 3$
- C. $|x - 3| \geq -2$
- D. $|x + 3| \geq -2$
18. What is the value of the expression $\sqrt{9 + 16} - 12 \div 2^2 + 3 \times (9 - 5)$?
- A. 5
- B. 7
- C. 14
- D. 16
19. What is the value of the expression $\left(3\frac{1}{4} - 1.019\right) \div 0.07$ rounded to the nearest tenth?
- A. 31.9
- B. 32.1
- C. 34.1
- D. 34.6

20. Use the calculation below to answer the question that follows.

To multiply 13×45 :

$$1 \times 45 = 45$$

$$2 \times 45 = 90$$

$$4 \times 45 = 180$$

$$8 \times 45 = 360$$

Since $13 = 8 + 4 + 1$, then $13 \times 45 = 360 + 180 + 45 = 585$

The strategy above is based on which of the following properties of real numbers?

- A. identity
 - B. commutative
 - C. reflexive
 - D. distributive
21. A home products store sells two types of grass seed.

- A 50-pound bag of bluegrass costs \$165.
- A 50-pound bag of fescue costs \$108.

In a particular week, the store sold 8 more bags of fescue than of bluegrass. The income from the bags of bluegrass was \$294 less than the income from the bags of fescue. Which of the following equations could be solved to find b , the number of bags of bluegrass sold that week?

- A. $108(b + 8) = 165b + 294$
- B. $108b + 294 = 165(b - 8)$
- C. $108(b + 8) + 294 = 165b$
- D. $108b = 165(b - 8) + 294$

22. The formula $L = \pi(r_1 + r_2) + 2d$ calculates the length L of a belt around two pulleys whose radii are r_1 and r_2 if the distance between their centers is d . Which of the following formulas could be used to calculate r_1 , the radius of one of the pulleys?

A. $r_1 = \pi(L - 2d) - r_2$

B. $r_1 = \frac{L - 2d}{\pi} - r_2$

C. $r_1 = \frac{L - 2d - r_2}{\pi}$

D. $r_1 = \frac{L - 2d}{\pi r_2}$

23. The ratio of adults to children on a bus was 4 to 1. When 15 adults got off at the next stop and no one else got on, the ratio of adults to children became 5 to 2. Which of the following equations could be used to find c , the number of children on the bus?

A. $\frac{4c - 15}{c} = \frac{5}{2}$

B. $\frac{\frac{1}{4}c - 15}{c} = \frac{5}{2}$

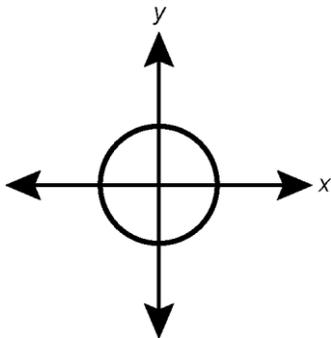
C. $\frac{c}{4c - 15} = \frac{5}{2}$

D. $\frac{c}{\frac{1}{4}c - 15} = \frac{5}{2}$

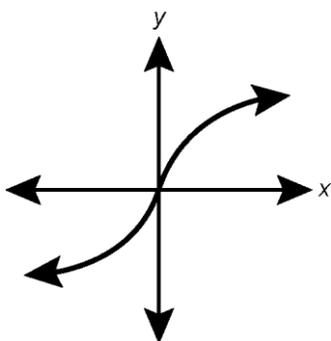
24. The sum of four consecutive integers is greater than 25, but less than 50. If x represents the least of the four integers, which of the following inequalities can be used to solve for x ?
- A. $25 < 4x + 4 < 50$
 - B. $25 > 4x + 4 < 50$
 - C. $25 < 4x + 6 < 50$
 - D. $25 > 4x + 6 < 50$
25. At a constant temperature, the volume of a gas is inversely proportional to the pressure exerted on the gas. The volume of a certain gas sample is 12 cubic feet at a pressure of 1000 millimeters of mercury. What will the volume of this gas sample be at a pressure of 600 millimeters of mercury if the temperature is kept constant?
- A. 7.2 cubic feet
 - B. 20 cubic feet
 - C. 72 cubic feet
 - D. 200 cubic feet
26. Which of the following ordered pairs would lie on the graph of the function $f(x) = 2|x| - 1$?
- A. $(-7, -3)$
 - B. $(-3, -7)$
 - C. $(-3, 5)$
 - D. $(5, -3)$

27. Which of the following graphs represents y as a function of x ?

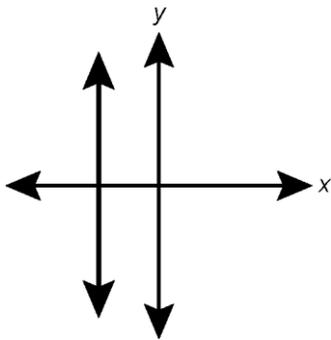
A.



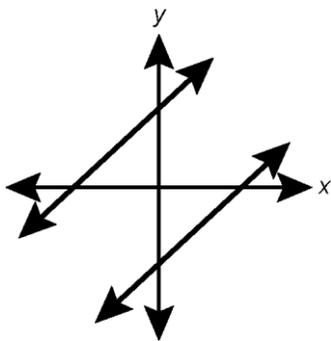
B.



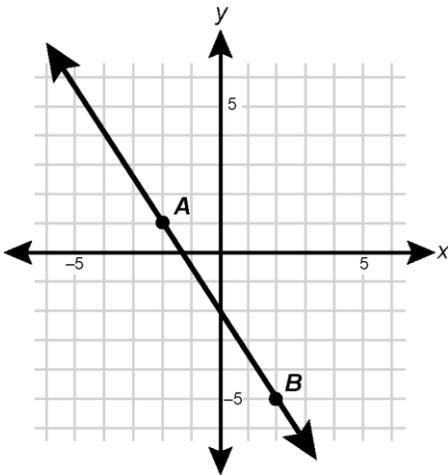
C.



D.



28. Use the graph below to answer the question that follows.



Which of the following lines, if graphed on the coordinate system above, would be parallel to line AB ?

- A. $y = 3$
- B. $y = 2x$
- C. $y = -\frac{2}{3}x + 2$
- D. $y = -\frac{3}{2}x + 1$

29. Use the table below to answer the question that follows.

Depth Below Surface (kilometers)	Temperature (°C)
5	80
9	180

In 1984 a deep drilling project showed that for depths greater than 3 kilometers, the temperature of the earth's crust can be modeled as a linear function of the depth below the surface of the earth. Using a linear model and given the data in the table above, what is the temperature of the earth at a depth of 18 kilometers?

- A. 315°C
 - B. 360°C
 - C. 405°C
 - D. 430°C
30. On a coordinate plane, the graph of the function $y = mx + b$ has a positive y -intercept and a negative x -intercept. Which of the following statements must be true?
- A. $m > 0$ and $b > 0$
 - B. $m > 0$ and $b < 0$
 - C. $m < 0$ and $b > 0$
 - D. $m < 0$ and $b < 0$

31. In the early morning a baker sells 2 dozen muffins, and no doughnuts. For the rest of the day, sales follow a pattern of 7 doughnuts for every 2 muffins. If the horizontal axis (x -axis) represents the number of doughnuts sold in a day and the vertical axis (y -axis) represents the number of muffins sold in a day, which of the following statements describes the graph of a line drawn through the data points?
- A. The line has an x -intercept at 24 and a slope of $\frac{7}{2}$.
- B. The line has an x -intercept at 24 and a slope of $\frac{2}{7}$.
- C. The line has a y -intercept at 24 and a slope of $\frac{7}{2}$.
- D. The line has a y -intercept at 24 and a slope of $\frac{2}{7}$.
32. The length, width, and height of a rectangular box are each doubled. How does the surface area of the larger box compare to the surface area of the original box?
- A. 2 times the surface area of the original box
- B. 4 times the surface area of the original box
- C. 12 times the surface area of the original box
- D. 24 times the surface area of the original box

33. Use the information below to answer the question that follows.

1 kilometer = 1000 meters

1 hour = 3600 seconds

Mach numbers were invented to report the speeds of jet planes that can travel faster than the speed of sound. A Mach number tells how many times as fast as the speed of sound the jet travels. For example, Mach 2 is twice the speed of sound.

A jet travels at Mach 3. If the speed of sound in air is approximately 344 meters per second, which of the following expressions represents the speed of the jet in kilometers per hour?

A. $\frac{3 \times 344 \times 3600}{1000}$

B. $\frac{3 \times 344 \times 1000}{3600}$

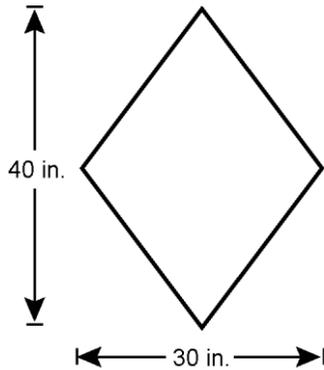
C. $\frac{344 \times 3600}{3 \times 1000}$

D. $\frac{344 \times 1000}{3 \times 3600}$

34. Use the statements and the diagram below to answer the question that follows.

The diagonals of a rhombus bisect each other.

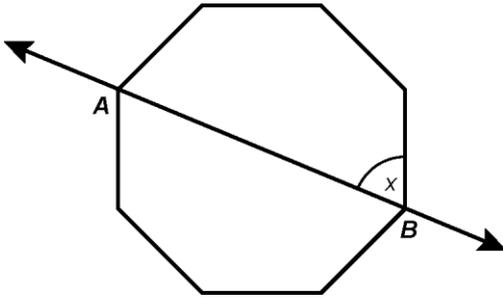
The diagonals of a rhombus are perpendicular to each other.



A window is being manufactured in the shape of the rhombus shown above. Its height will be 40 inches and its width will be 30 inches. If the window is to have a single pane of glass, how many square inches of glass will be required?

- A. 150
 - B. 300
 - C. 600
 - D. 1200
35. To measure the length of a winding path through a city park, a park manager rolled an instrument consisting of a wheel with a 10-inch radius along the path. The wheel made 200 revolutions. If 3 is used as an estimate for π , approximately how long is the path in feet?
- A. 500 feet
 - B. 1,000 feet
 - C. 5,000 feet
 - D. 12,000 feet

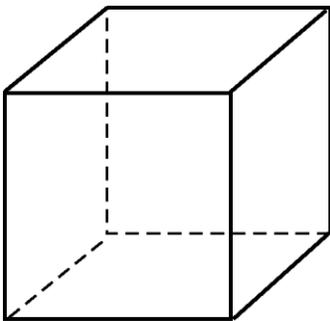
36. Use the diagram below to answer the question that follows.



Line AB is one of the lines of symmetry in the regular octagon shown above. What is the measure of angle x ?

- A. 45°
- B. 56.25°
- C. 60°
- D. 67.5°

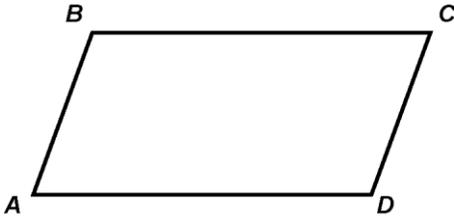
37. Use the diagram below to answer the question that follows.



Euler's polyhedron formula relates the numbers of faces, edges, and vertices of any closed polyhedron. If E , F , and V represent the number of edges, faces, and vertices respectively of the cube shown above, which of the following equations relating these values is true?

- A. $F + V = E + 2$
- B. $F + V = E + 6$
- C. $F + V = E + 8$
- D. $F + V = E + 14$

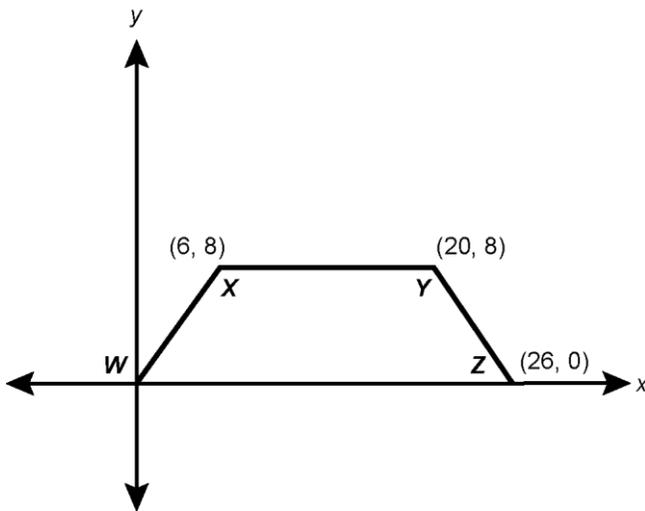
38. Use the diagram below to answer the question that follows.



Quadrilateral $ABCD$ is a parallelogram. Which of the following statements is true?

- A. $ABCD$ has exactly two lines of symmetry.
- B. Point C is the reflection of point A across diagonal BD .
- C. Reflecting $ABCD$ over side CD is equivalent to a horizontal translation of length BC .
- D. $ABCD$ has 180° rotational symmetry about the point of intersection of its diagonals.

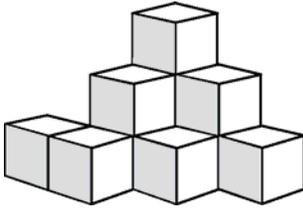
39. Use the graph below to answer the question that follows.



What is the perimeter of quadrilateral WXYZ in the graph above?

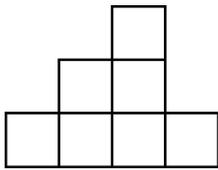
- A. 52
- B. 58
- C. 60
- D. 62

40. Use the diagram below to answer the question that follows.

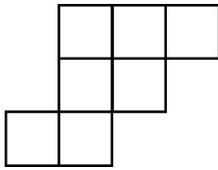


If the shaded faces in the figure shown above represent the front view of the figure, which of the following diagrams is the back view of the figure?

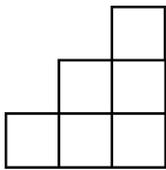
A.



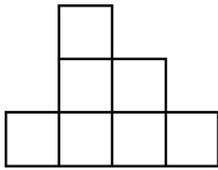
B.



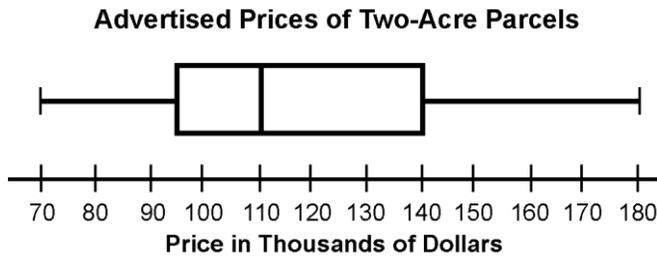
C.



D.



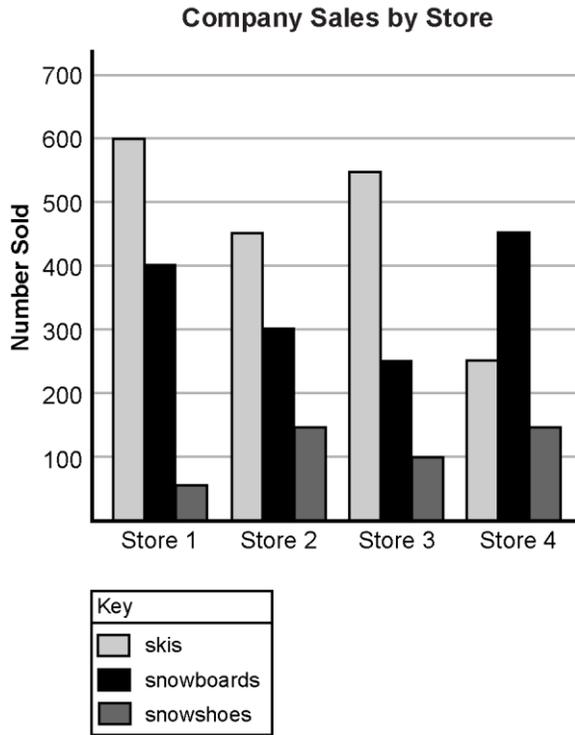
41. Use the box plot below to answer the question that follows.



The box plot above represents the advertised prices, in thousands of dollars, of 2-acre parcels of land in a particular county. Based on the box plot, which of the following statements is true?

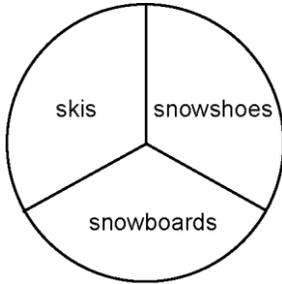
- A. The mean price of a parcel is \$110,000.
- B. There is only one parcel priced at \$180,000.
- C. More than half of the parcels are priced higher than \$110,000.
- D. If the data represent 50 parcels, then at least 12 of them are priced at or below \$95,000.

42. Use the information below to answer the question that follows.

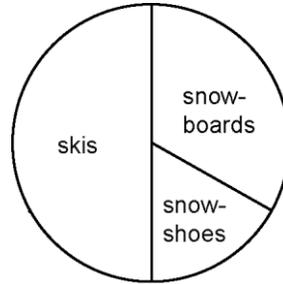


The data in the graph above represent the number of snowboards, pairs of skis, and pairs of snowshoes sold by a sporting goods company in each of four stores during the winter season. Which of the following circle graphs represents the sports equipment sold in Store 2?

A.



B.



C.



D.



43. Use the table below to answer the question that follows.

Bread	Number of Loaves Sold
whole wheat	32
sesame seed	60
rosemary	25
poppy seed	18
sourdough	15

A bakery sells five kinds of bread. The table shows the number of loaves of each type of bread sold so far this week. Given the data in the table, what is the probability that the next loaf of bread sold will be sesame seed?

- A. $37\frac{1}{2}\%$
- B. 40%
- C. 60%
- D. $66\frac{2}{3}\%$

44. A class kept track of the weather for 60 days and compared the actual weather to the local weather forecaster's predictions. Of the 15 days for which rain was predicted, there were 10 days of rain and 5 days with no rain. Of the 45 days for which no rain was predicted, there were 10 days of rain and 35 days with no rain. What is the probability that the forecast was accurate with regard to rain for any given day during the entire 60-day period?

A. $\frac{1}{4}$

B. $\frac{5}{12}$

C. $\frac{1}{2}$

D. $\frac{3}{4}$

45. A box contains 5 red cubes, 2 white cubes, and 7 purple cubes. One cube is randomly picked from the box. Without replacing the first cube, a second cube is randomly picked. What is the probability that *neither* of the cubes picked is purple?

A. $\frac{1}{2}$

B. $\frac{2}{7}$

C. $\frac{3}{13}$

D. $\frac{25}{26}$

DIRECTIONS FOR THE OPEN-RESPONSE ITEM ASSIGNMENT

This section of the test consists of an open-response item assignment that appears on the following page. You will be asked to prepare a written response of approximately 1–2 pages for the assignment. You should use your time to plan, write, review, and edit your response for the assignment.

Read the topic and directions for the assignment carefully before you begin to work. Think about how you will organize your response.

As a whole, your response to the assignment must demonstrate an understanding of the knowledge of the field. In your response to the assignment, you are expected to demonstrate the depth of your understanding of the subject area by applying your knowledge rather than by merely reciting factual information.

Your response to the assignment will be evaluated based on the following criteria.

- **PURPOSE:** the extent to which the response achieves the purpose of the assignment
- **SUBJECT KNOWLEDGE:** appropriateness and accuracy in the application of subject knowledge
- **SUPPORT:** quality and relevance of supporting evidence
- **RATIONALE:** soundness of argument and degree of understanding of the subject area

The open-response item assignment is intended to assess subject knowledge. Your response must be communicated clearly enough to permit valid judgment of the evaluation criteria by scorers. Your response should be written for an audience of educators in this field. The final version of your response should conform to the conventions of edited American English. Your response should be your original work, written in your own words, and not copied or paraphrased from some other work.

Be sure to write about the assigned topic. Please write legibly. You may not use any reference materials during the test. Remember to review your work and make any changes you think will improve your response.

Write or print your response in the space provided following the assignment.

OPEN-RESPONSE ITEM ASSIGNMENT

Use the information below to complete the exercise that follows.

Students are asked to solve the following problem.

On Monday, a parking garage was 60% full, with 120 cars parked. On Tuesday, there were 30 more cars parked in the garage than there were on Monday. What percentage of the garage was full on Tuesday?

Student response:

There were 30 more cars on Tuesday, so there were 150 cars on Tuesday.

$$\begin{array}{r} 0.70 \\ 150 \overline{)120.00} \end{array}$$
, so the garage was 70% full on Tuesday.

Use your knowledge of mathematics to create a response in which you analyze the student's work and provide an alternative solution to the problem. In your response, you should do the following:

- Correct any errors or misconceptions evident in the student's work.
- Explain why the response is not mathematically sound. Be sure to
 - provide a correct solution,
 - show your work, and
 - explain your reasoning.
- Solve the problem using an alternative method that could enhance the student's conceptual understanding of percentage in the context of the problem.

PRACTICE TEST RESULTS

PRACTICE TEST RESULTS OVERVIEW

The practice test provides valuable information regarding your preparedness for the MTEL General Curriculum (03): Mathematics subtest. In this section, you will find information and tools to help you determine your preparedness on the various sections of the test.

Multiple-Choice Questions

A Multiple-Choice Question Answer Key Worksheet is provided to assist you in evaluating your multiple-choice responses. The worksheet contains five columns. The first column indicates the multiple-choice question number, the second column indicates the objective to which the test question was written, and the third column indicates the correct response. The remaining columns are for your use in calculating the number of multiple-choice questions you answered correctly or incorrectly.

An Evaluation Chart for the multiple-choice questions is also provided to help you assess which content covered by the test objectives may require additional study.

Multiple-Choice Question Analyses are provided to explain the correct answer for each question as well as why the other responses are not correct.

Open-Response Item

Evaluation Information, Sample Responses and Analyses, as well as a Scoring Rubric are provided for this item. You may wish to refer to this information when evaluating your practice test response.

Total Test

Practice Test Score Calculation information is provided to help you estimate your score on the practice test. Although you cannot use this practice test to precisely predict how you might score on an official MTEL General Curriculum: Mathematics subtest, you may be able to determine your degree of readiness to take an MTEL test at an operational administration. No passing score has been determined for the practice test.

**MULTIPLE-CHOICE QUESTION
ANSWER KEY WORKSHEET**

Question Number	Objective Number	Correct Response	Your Response	
			Correct?	Incorrect?
1	0016	D		
2	0016	A		
3	0016	C		
4	0016	B		
5	0017	B		
6	0017	A		
7	0017	D		
8	0017	C		
9	0017	B		
10	0017	D		
11	0018	C		
12	0018	A		
13	0018	C		
14	0018	B		
15	0018	D		
16	0019	B		
17	0019	B		
18	0019	C		
19	0019	A		
20	0019	D		
21	0020	A		
22	0020	B		
23	0020	A		
24	0020	C		
25	0021	B		

**MULTIPLE-CHOICE QUESTION
ANSWER KEY WORKSHEET (continued)**

Question Number	Objective Number	Correct Response	Your Response	
			Correct?	Incorrect?
26	0021	C		
27	0021	B		
28	0022	D		
29	0022	C		
30	0022	A		
31	0022	D		
32	0023	B		
33	0023	A		
34	0023	C		
35	0023	B		
36	0024	D		
37	0024	A		
38	0024	D		
39	0024	C		
40	0024	A		
41	0025	D		
42	0025	B		
43	0026	B		
44	0026	D		
45	0026	C		

Count the number of multiple-choice questions you answered correctly:

_____ of 45 multiple-choice questions

MULTIPLE-CHOICE QUESTION PRACTICE TEST EVALUATION CHART

In the evaluation chart that follows, the multiple-choice questions are arranged in numerical order and by test objective. Check your responses against the correct responses provided to determine how many questions within each objective you answered correctly.

Subarea V: Numbers and Operations

Objective 0016: Understand the number system and the concept of place value.	
1D____ 2A____ 3C____ 4B____	____/4

Objective 0017: Understand integers, fractions, decimals, percents, and mixed numbers.	
5B____ 6A____ 7D____ 8C____ 9B____ 10D____	____/6

Objective 0018: Understand and apply principles of number theory.	
11C____ 12A____ 13C____ 14B____ 15D____	____/5

Objective 0019: Understand operations on numbers.	
16B____ 17B____ 18C____ 19A____ 20D____	____/5

Subarea V (Objectives 0016–0019) Total ____/20

Subarea VI: Functions and Algebra

Objective 0020: Understand algebra as generalized arithmetic.	
21A____ 22B____ 23A____ 24C____	____/4

Objective 0021: Understand the concept of function.	
25B____ 26C____ 27B____	____/3

Objective 0022: Understand linear functions and linear equations.	
28D____ 29C____ 30A____ 31D____	____/4

Subarea VI (Objectives 0020–0022) Total ____/11

**MULTIPLE-CHOICE QUESTION
PRACTICE TEST EVALUATION CHART (continued)**

Subarea VII: Geometry and Measurement

Objective 0023: Understand and apply concepts of measurement.				
32B	33A	34C	35B	____/4

Objective 0024: Understand and apply concepts of geometry.					
36D	37A	38D	39C	40A	____/5

Subarea VII (Objectives 0023–0024) Total ____/9

Subarea VIII: Statistics and Probability

Objective 0025: Understand descriptive statistics.				
41D	42B			____/2

Objective 0026: Understand and apply basic concepts of probability.				
43B	44D	45C		____/3

Subarea VIII (Objectives 0025–0026) Total ____/5

OPEN-RESPONSE ITEM EVALUATION INFORMATION

How Open-Response Items Are Scored

Open-response items are scored through a process called focused holistic scoring. Scorers judge the overall effectiveness of the response rather than individual aspects considered in isolation. Scorer judgments are based on the quality of the response, not on length or neatness. Responses must be long enough to cover the topic adequately and scorers must be able to read what is written.

How to Evaluate Your Practice Essay

On the following pages, you will find two "strong" and two "weak" sample responses. PLEASE DO NOT REVIEW THE SAMPLE RESPONSES UNTIL AFTER YOU HAVE WRITTEN YOUR OWN RESPONSE. When you do review the two "strong" and "weak" sample responses and analyses included here, please note the following points:

- ✓ For the purposes of the practice test, responses are identified as "strong" or "weak" rather than given a score point of 1–4.
- ✓ The responses identified as "strong" may contain flaws; however, these responses do demonstrate the performance characteristics of a "strong response."
- ✓ The two "strong" responses demonstrate the examinees' appropriate understanding and application of the subject matter knowledge. However, these responses do not necessarily reflect the full range of "correct answers" that would demonstrate an understanding of the subject matter.
- ✓ The "Analysis" accompanying each "strong" and "weak" response discusses the main attributes of the response, but does not identify all flaws or strengths that may be present.

Compare your practice response to the Sample Responses to determine whether your response is more similar to the strong or weak responses. Also review the Analyses on those pages and the Scoring Rubric to help you better understand the characteristics of strong and weak essays. This evaluation will help you identify specific problems or weaknesses in your practice response. Further information on scoring can be found in the Test Information Booklet and Faculty Guide at www.mtel.nesinc.com and at www.doe.mass.edu/mtel; select "FAQ," then "After the Test."

**OPEN-RESPONSE ITEM
SCORING RUBRIC, SAMPLE RESPONSES,
AND ANALYSES**

Massachusetts Tests for Educator Licensure®
SCORING RUBRIC FOR SUBJECT TESTS

Performance Characteristics:

Purpose	The extent to which the response achieves the purpose of the assignment.
Subject Matter Knowledge	Accuracy and appropriateness in the application of subject matter knowledge.
Support	Quality and relevance of supporting details.
Rationale	Soundness of argument and degree of understanding of the subject matter.

Scoring Scale:

Score Point	Score Point Description
4	<p>The "4" response reflects a thorough knowledge and understanding of the subject matter.</p> <ul style="list-style-type: none"> • The purpose of the assignment is fully achieved. • There is a substantial, accurate, and appropriate application of subject matter knowledge. • The supporting evidence is sound; there are high-quality, relevant examples. • The response reflects an ably reasoned, comprehensive understanding of the topic.
3	<p>The "3" response reflects an adequate knowledge and understanding of the subject matter.</p> <ul style="list-style-type: none"> • The purpose of the assignment is largely achieved. • There is a generally accurate and appropriate application of subject matter knowledge. • The supporting evidence is adequate; there are some acceptable, relevant examples. • The response reflects an adequately reasoned understanding of the topic.
2	<p>The "2" response reflects a limited knowledge and understanding of the subject matter.</p> <ul style="list-style-type: none"> • The purpose of the assignment is partially achieved. • There is a limited, possibly inaccurate or inappropriate, application of subject matter knowledge. • The supporting evidence is limited; there are few relevant examples. • The response reflects a limited, poorly reasoned understanding of the topic.
1	<p>The "1" response reflects a weak knowledge and understanding of the subject matter.</p> <ul style="list-style-type: none"> • The purpose of the assignment is not achieved. • There is little or no appropriate or accurate application of subject matter knowledge. • The supporting evidence, if present, is weak; there are few or no relevant examples. • The response reflects little or no reasoning about or understanding of the topic.
U	The response is unrelated to the assigned topic, illegible, primarily in a language other than English, not of sufficient length to score, or merely a repetition of the assignment.
B	There is no response to the assignment.

FIRST SAMPLE WEAK RESPONSE FOR THE OPEN-RESPONSE ITEM ASSIGNMENT

The first thing I notice is that the student did her division wrong. The decimal is in the right place, but the answer would be 80%. If she had shown her work, I would be able to tell if it was a careless error or if she didn't know how to divide.

Also she shouldn't divide 120 by 150.

A fraction is between two numbers, with the top part being less than the bottom part. We're trying to find how full the garage was on Tuesday, which is not completely full, but has 30 more cars than it did on Monday.

What she should do is find 60% of 120.

$$\begin{array}{r} 120 \\ \times .6 \\ \hline 72 \end{array}$$

This will be the additional parking spaces that are available.

Add 72 and 120 to get 192 total spaces. Tuesday's cars are $120 + 30 = 150$.

$$\frac{150}{192} = \text{the percent of the garage full on Tuesday}$$

Reduce the fraction to make it easier to divide: $75/96$

$$\begin{array}{r} .78 \\ 96 \overline{)75.00} \\ \underline{672} \\ 780 \\ \underline{768} \\ 12 \end{array}$$

The garage is 78% full on Tuesday.

To help the student think about percentages and the concept behind this problem, you could draw a picture to help the student see the parking spaces, how many on Monday, then add 30 on Tuesday, with blank spaces for the total number.

ANALYSIS FOR FIRST WEAK RESPONSE TO THE OPEN-RESPONSE ITEM ASSIGNMENT

This is an example of a weak response because it is characterized by the following:

Purpose: The candidate's response does not adequately answer all charges of the question. Although the division error is noted, there is no explanation of how it happened or how to correct it. The candidate seems to understand that there is a problem with the student's ratio but goes on to create an incorrect fraction that leads to the wrong solution. The alternative method is not described in enough detail to show how it would lead to the correct answer.

Subject Matter Knowledge: The math knowledge demonstrated in this response is limited. The candidate can do long division, convert a fraction into a decimal, and convert a decimal into a percent. The candidate's definition of a fraction being "between two numbers, with the top part being less than the bottom part" shows partial understanding and uses nonmathematical terms. The candidate shows weak knowledge in the concept of percentage by confusing the whole (which should be the total number of spaces in the garage) with a part (the number of cars in the garage on Monday). The response shows no evidence that the candidate understands that a proportion must be set up in order to solve the problem.

Support: While the response does show the steps for one long division problem, other parts of the response are limited and lacking in explanation. The candidate only demonstrates a partial understanding of the concepts of ratios and percentages. Showing the steps involved in correcting the student's math error while dividing 120 by 150 would strengthen the response. Even though the candidate is incorrect in finding 60% of 120 as a way to solve the problem, he should still support his statement with an explanation of his thinking. The alternate method needs more specifics: the candidate should draw the "picture," showing specifically how to set up the parking spaces, and solve the problem a second time using the alternative approach.

Rationale: The response is poorly reasoned, with not enough explanation at each step of the answer. For instance, the candidate should explain *why* the student "shouldn't divide 120 by 150." There is a significant misunderstanding of the relation of part to whole in the approach of multiplying the part given (120) by the percentage it represents in relation to the whole rather than dividing that part by the percentage it represents, which would yield the correct total number of parking spaces (200). In the suggested alternative method, it is unclear how the candidate will calculate how many "blank spaces" will be needed for the "total number."

**SECOND SAMPLE WEAK RESPONSE FOR THE
OPEN-RESPONSE ITEM ASSIGNMENT**

I would not do it this way. Another way to do it is to set it up to solve for x , which is the percentage of cars in the garage on Tuesday. To do this, you have to understand fractions and how work through a word problem.

The problem gives you several numbers: 60, 120, and 30. The trick is in understanding how they are related in order to solve for the correct percent. 60 and 120 are related because they describe the garage on Monday. 30 is all that is given for Tuesday, but we know that it is more than Monday, which was 120. So add those together to get 150. I think the student did this because there is a 150 in the way he set it up.

So solve for x :

$$\frac{150}{120} = \frac{30}{x}$$

$$150x = 30(120)$$

$$150x = 3600$$

$$x = 24$$

If x equals 24%, you can add that to 60 and see that there the garage was 84% full on Tuesday.

If you did it the student way, you'd get 80%, which is close but not correct. You can't just set this up as a fraction of all the cars on Monday compared to all the cars on Tuesday.

To work with the student on percent, I would start with ones that he probably already knows to build confidence, like $1/4 = 25\%$ and $1/3 = 33\%$. Then I would set up a problem similar to the one here but simpler, like if there were 10 pencils in the box on Monday, 15 pencils on Tuesday, and there should be 20 pencils in all, what percentage of pencils are there in the box on Tuesday? Solving this problem would then lead to attacking the concepts in the garage problem.

ANALYSIS FOR SECOND WEAK RESPONSE TO THE OPEN-RESPONSE ITEM ASSIGNMENT

This is an example of a weak response because it is characterized by the following:

Purpose: This response does not analyze the elementary school student's work by explaining the errors in the student's work and why the student's work is not mathematically sound. It does not provide a correct solution either in addressing the student's work or when providing an alternative method for enhancing understanding of the concept of percentage.

Subject Matter Knowledge: The candidate demonstrates limited mathematical knowledge in attempting to solve the problem. She knows that an equation must be used to solve for the unknown percentage, and although the wrong proportion is used, the math in solving for "x" is correct. There are few precise math terms; instead the candidate writes that the "problem gives you several numbers." Some knowledge is implied by mentioning that the student's way would result in "80%," since the candidate would have to do the division problem correctly to get that answer. While pointing out that the student was incorrect in setting the problem up "as a fraction of all the cars on Monday compared to all the cars on Tuesday," the response contains no explanation of why this is not a sound way of approaching the problem.

Support: Many statements are not supported with explanation. For example, the candidate writes that to solve the problem "you have to understand fractions," but there is no explanation of fractions and their significance in the question. There are some details, but not an adequate amount relevant to answering all parts of the charge to the candidate. The candidate should have shown how 80% is the correct answer according to the student's solution, as well as how the alternative method leads to the correct solution.

Rationale: Although the candidate writes that "the trick is in understanding how [the numbers] are related," the response does not show much evidence of mastering the trick. It makes sense that "60 and 120 are related," but that relationship is not understood in the context of solving for the percentage full on Tuesday. There is no reasoning given for how the candidate sets up the proportion. Likewise, recognizing that the student "can't just set this up as a fraction of all the cars on Monday compared to all the cars on Tuesday" only begins to explain what the student would need to know in order to understand how to find an unknown percentage.

FIRST SAMPLE STRONG RESPONSE FOR THE OPEN-RESPONSE ITEM ASSIGNMENT

While the student is correct that there will be 150 cars on Tuesday (because $120 + 30 = 150$), it is not correct to divide 120 by 150 to get the percentage of the garage that was full on Tuesday. This is because both 120 and 150 are parts of the whole (the total number of cars when the garage is full), and the solution is a percent, that is, a ratio of a part to a whole, not a ratio of a part to a part.

Parts need to be compared to parts, so the "car" parts need to be compared to "percentage" parts. Therefore, the percent that is known (60%) is set up as a ratio to the unknown percent ($x\%$).

A proportion is an equation that compares two ratios that are equal.

The proportion would be 120 is to 60% as 150 is to $x\%$ and would be written as follows:

$$\frac{120}{150} = \frac{60}{x}$$

Cross-multiply:

$$120x = 150(60)$$

$$120x = 9000$$

$$120x/120 = 9000/120$$

$$x = 9000/120$$

$$x = 75$$

This means that 75% of the garage is full on Tuesday.

The other mistake the student made was a math mistake in the division. Using his numbers the division would be

$$\begin{array}{r} 0.8 \\ 150 \overline{)120.0} \\ \underline{-1200} \\ 0 \end{array}$$

The student seems to know how to convert the division answer to percentage: multiply 8 by 100 to get 80%. (The student incorrectly came up with 70%). But the answer is not 80% because the proportion is not set up correctly.

Another way the student could do this problem to better understand the concept of percentage is to first find out the total number of parking spaces and then use this number to find the new percent. The total number of parking spaces needs to be found through setting up a proportion that compares the 60/100 (the percentage that is known) to the 120 (part) divided by the unknown number of parking spaces available (whole), i.e., $120/x$.

(continued)

He should use the 60% value he's given to set up a proportion and solve for x. 60% means 60 out of one hundred.

$$\frac{60}{100} = \frac{120}{x} \leftarrow \text{part}$$
$$\leftarrow \text{whole}$$

Cross-multiply:

$$60x = 100(120)$$

$$60x = 12000$$

$$x = 12000/60$$

$$x = 200$$

This means there are 200 available parking spots in the garage.

Next, set up a new proportion to find the percent (y) of the garage that's filled on Tuesday.

$$\frac{y}{100} = \frac{150}{200} \leftarrow \text{part}$$
$$\leftarrow \text{whole}$$

Cross-multiply:

$$200y = 100(150)$$

$$200y = 15000$$

$$y = 15000/200$$

$$y = 75$$

The garage is 75% full on Tuesday.

ANALYSIS FOR FIRST STRONG RESPONSE TO THE OPEN-RESPONSE ITEM ASSIGNMENT

This is an example of a strong response because it is characterized by the following:

Purpose: The response fully achieves the purpose of this assignment. The candidate finds and analyzes all the errors that the student made. The first error was a conceptual error, incorrectly setting up a ratio of parts to parts rather than a proportion. The second error was a mathematical one in the division itself. The candidate finds the correct answer and describes a way to get the correct answer using an alternate method that could enhance the student's understanding of percent. The charge is to find the solution first by working with the student's initial set-up, and then to find the solution again by way of another approach. The response thoroughly addresses the charge.

Subject Matter Knowledge: In explaining the nature of the student's errors, the candidate shows substantial and accurate knowledge about the meaning of percent, proportions, and ratios, as well as the operations of division and multiplication. The explanation is substantial, accurate, and appropriate. Rather than simply setting up the correct proportion, the candidate explains the concept behind the error, demonstrating her math knowledge about percentage.

Support: The supporting evidence is sound. General statements are followed with specifics. For example, "Parts need to be compared to parts" is further elaborated by "so the 'car' parts need to be compared to the 'percentage' parts," and then even further explained by the specific percentage (60) and the unknown percent (x). In working out the solution, the candidate provides all of the steps in solving for x .

Rationale: The candidate demonstrates clear reasoning about the errors the student made, the concepts behind a correct approach to solving the problem, and, through the alternate solution, the ways the problem can be approached from a different angle to help the student understand percentages better.

**SECOND SAMPLE STRONG RESPONSE FOR THE
OPEN-RESPONSE ITEM ASSIGNMENT**

The student's addition is correct--there were 150 cars on Tuesday--but the garage is not 70% full on that day.

The student's first error is that she didn't use the number of cars on Monday and Tuesday to set up a proper proportion; she just set up a ratio (divided the smaller number by the larger number.) The incorrect division the student sets up means that 120 is the dividend (or numerator) and 150 is the divisor (or denominator). $120/150$ means 120 spaces of 150 total spaces are filled, but the total number of spaces in the garage is not 150 because that number is a part of a whole, and the whole is not given.

A proportion is an equation that compares two ratios that are equal, meaning that the two fractions are equal.

The student's second error is not doing the division problem correctly. Using the student's values would lead to 80%, not 70%, although neither answer is the correct solution.

$$\begin{array}{r} 0.8 \\ 150 \overline{)120.0} \\ \underline{-1200} \\ 0 \end{array}$$

The student could have checked her work by multiplying

$$.7 \times 150 = 105, \text{ which is 15 less than 120.}$$

$$.8 \times 150 = 120.$$

Also, although the student's answer is expressed as a percentage, the student didn't show her work of multiplying the decimal times 100 (percent is the number out of 100) to get the percent.

If 120 cars = 60%, then 150 cars = the unknown %.

This can be shown by setting up a proportion (rather than a division problem). The two fractions are equal to each other:

$$\frac{150}{120} = \frac{x}{60}$$

$$120x = 150(60)$$

$$120x = 9000$$

$$x = 9000/120$$

$$x = 75$$

The garage is 75% full on Tuesday.

(continued)

Many students are visual learners. To help this student understand percentages, you could draw a picture with 10 boxes. If only 6 of the boxes are filled with 120 cars on Monday (that would be 60% since $6/10$ is the same fraction as $60/100$), then each box would hold 20 cars (20 times 6 boxes = 120).

Then see how many more boxes would get filled in with the additional 30 cars on Tuesday. You will see that an additional box and a half will be filled. That means 7.5 boxes are filled. $7.5/10$ is the same fraction as $75/100$. $75/100$ is the same as 75%.

20 Monday	20 Monday	20 Monday	20 Monday	20 Monday
20 Monday	20 Tuesday	10 Tues //	////////	////////

ANALYSIS FOR SECOND STRONG RESPONSE TO THE OPEN-RESPONSE ITEM ASSIGNMENT

This is an example of a strong response because it is characterized by the following:

Purpose: The candidate responds to all parts of the question. The response *corrects* the student's errors (there were two: a misconception concerning ratios versus proportions and a division mistake) and *explains* what the student was not understanding about the math involved in solving this problem. The candidate solves the problem twice, first in working with the student's original approach, and then again when providing an alternate way of approaching the problem so that the student could better understand the concept of percent.

Subject Matter Knowledge: The candidate's math knowledge is evident throughout the response, both in the ways the problem is solved and in the explanations of the work. In addressing the mathematical error, the candidate shows how the student could have "checked" the answer of ".7" by multiplying it by 150 to see that it does not equal 120, showing more math knowledge. Math terminology is accurate (for example, dividend/numerator and divisor/denominator), and the alternate method, rather than showing another way to set up the proportion, demonstrates highly appropriate subject matter knowledge by suggesting a way for the student to conceptualize percentage visually.

Support: The candidate provides sound support for explanations. In all parts, specific numbers make clear what is being explained. All steps are shown in solving for "x" and in showing the division error. In the alternate method, the parentheticals support the claims being made: "that would be 60% since $6/10$ is the same fraction as $60/100$ " and "20 times 6 boxes = 120" show exactly how the graphic set-up works in the context of the problem.

Rationale: It is clear from the response that the candidate has a very solid understanding of percentages, ratios, and proportions. The explanation of the first conceptual error demonstrates sound reasoning about why the simple division of a ratio is not sufficient for solving the problem, and the response as a whole shows a thorough grasp of how to work with and solve for percentages. Graphically breaking down the whole into parts in the alternative method is evidence that the candidate can reason through multiple ways of teaching the concept of percent.

PRACTICE TEST SCORE CALCULATION

The practice test score calculation is provided so that you may better gauge your performance and degree of readiness to take an MTEL test at an operational administration. Although the results of this practice test may be used as one indicator of potential strengths and weaknesses in your knowledge of the content on the official test, it is not possible to predict precisely how you might score on an official MTEL test.

The Sample Responses and Analyses for the open-response items may help you determine whether your responses are more similar to the strong or weak samples. The Scoring Rubric can also assist in estimating a score for your open responses. You may also wish to ask a mentor or teacher to help evaluate your responses to the open-response questions prior to calculating your total estimated score.

How to Calculate Your Practice Test Score

Review the directions in the sample below and then use the blank practice test score calculation worksheet on the following page to calculate your estimated score.

SAMPLE

Multiple-Choice Section	
Enter the total number of multiple-choice questions you answered correctly:	<u>31</u>
Use Table 1 below to convert that number to the score and write your score in Box A :	A: <input type="text" value="220"/>

Open-Response Section	
Enter the number of points (1 to 4) for your open-response question:	<u>3</u>
Use Table 2 below to convert that number to the score and write your score in Box B :	B: <input type="text" value="24"/>

Total Practice Test Score (Estimated MTEL Score)	
Add the numbers in Boxes A and B for an estimate of your MTEL score:	A + B = <input type="text" value="244"/>

Practice Test Score Calculation Worksheet: General Curriculum Mathematics Subtest

Table 1:

Number of Multiple-Choice Questions Correct	Estimated MTEL Score	Number of Multiple-Choice Questions Correct	Estimated MTEL Score
0 to 6	116	25 to 27	197
7 to 9	127	28 to 30	208
10 to 12	139	31 to 33	220
13 to 15	150	34 to 36	231
16 to 18	162	37 to 39	243
19 to 21	174	40 to 42	255
22 to 24	185	43 to 45	266

Table 2:

Number of Open-Response Question Points	Estimated MTEL Score
1	12
2	18
3	24
4	30

Print the form below to calculate your estimated practice test score.

Multiple-Choice Section

Enter the total number of multiple-choice questions you answered correctly:

Use Table 1 above to convert that number to the score and write your score in **Box A**:

A:

Open-Response Section

Enter the number of points (1 to 4) for your open-response question:

Use Table 2 above to convert that number to the score and write your score in **Box B**:

B:

Total Practice Test Score (Estimated MTEL Score)

Add the numbers in **Boxes A and B** for an estimate of your MTEL score:

A + B =