

Student Name:

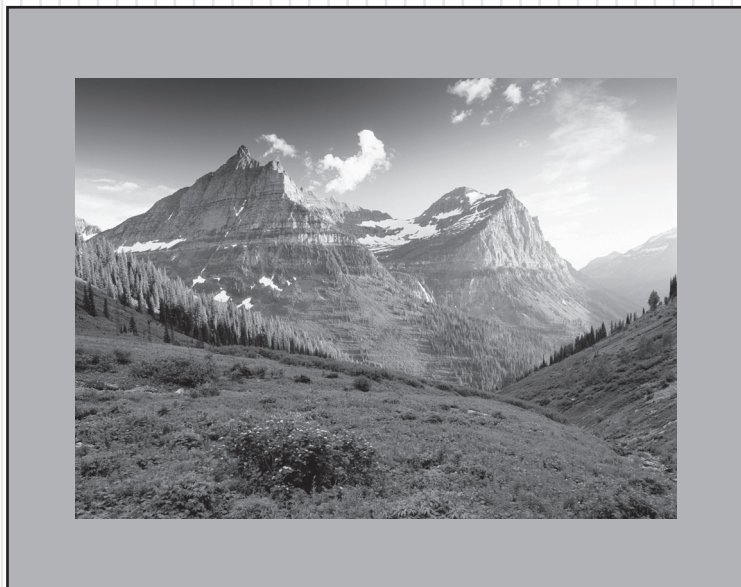
School Name:

Teacher/Class:

Montana

*Comprehensive Assessment
System (MontCAS, Phase 2 CRT)*

GRADE 7
COMMON RELEASED ITEMS
SPRING 2008



OPI

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Mathematics

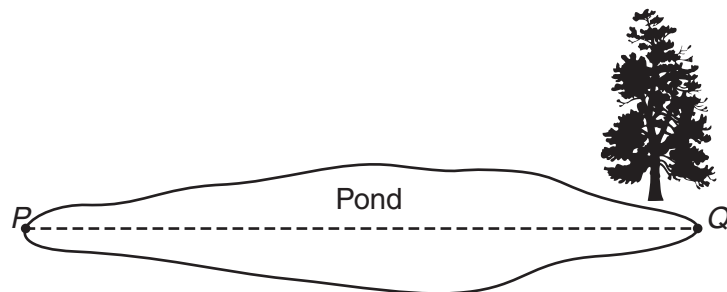
Session 1 (No Calculator)

This test session includes multiple-choice questions and questions for which you must show your work or write out your answer. You may NOT use a calculator during this session.

Mark your answers in the section marked "Mathematics—Session 1 (No Calculator)" in your Student Response Booklet.

9. Jacob wants to buy a game that costs \$37.25. He has saved \$12.25 each month for two months. How much **more** money does Jacob need to buy the game?
- A. \$12.75
B. \$13.35
C. \$24.50
D. \$49.75
11. Tuesday's stock market closing price was a change of -2.76 points from Monday's closing price. On Tuesday, the stock market closed at 1531.47 points. What was Monday's closing price?
- A. 1534.23 points
B. 1533.13 points
C. 1531.31 points
D. 1528.71 points

13. Study the diagram below.



The tree is about 20 feet tall. About how far is it from point P to point Q ?

- A. 3.5 feet
B. 7 feet
C. 70 feet
D. 100 feet
14. Which fraction is equivalent to $\frac{2}{3}$?
- A. $\frac{28}{36}$
B. $\frac{24}{32}$
C. $\frac{32}{48}$
D. $\frac{27}{45}$



16. To be complete, the equation below needs an operation symbol inside the parenthesis.

$$24 - (6 \square 2) \div 3 = 23$$

Which operation symbol should replace the box to make the equation true?

- A. +
- B. -
- C. ×
- D. ÷

17. Jenna bought two CDs priced at \$12.95 each. She used a coupon for 10% off the total purchase. Which is the **best** estimate for the price Jenna paid for the purchase?

- A. \$29.00
- B. \$26.00
- C. \$23.00
- D. \$20.00



Write your answers in the spaces provided in your Student Response Booklet. Show all of your work.

19. Compute:

$$15\% \text{ of } 80$$

20. Compute:

$$12 + 9 \div 3 \times 4 - 1$$

Mathematics

Session 2 (Calculator)

This test session includes multiple-choice questions. You may use a calculator during this session.

Mark your answers in the section marked "Mathematics—Session 2 (Calculator)" in your Student Response Booklet.

27. A printing company charges \$6 for each box of checks plus a one-time fee of \$4 for shipping. Which table shows the total cost, including shipping, for up to four boxes of checks?

A.

Boxes	Total Cost (\$)
1	6
2	10
3	14
4	18

B.

Boxes	Total Cost (\$)
1	10
2	14
3	18
4	22

C.

Boxes	Total Cost (\$)
1	10
2	16
3	22
4	28

D.

Boxes	Total Cost (\$)
1	10
2	20
3	30
4	40

29. Square P is shown below.



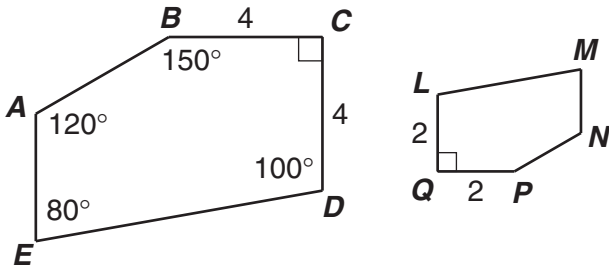
Square P

The area of Square P is 16 times as great as the area of Square Q . How many times as great as the length of Square Q is the length of Square P ?

- A. 2 times
- B. 4 times
- C. 8 times
- D. 16 times



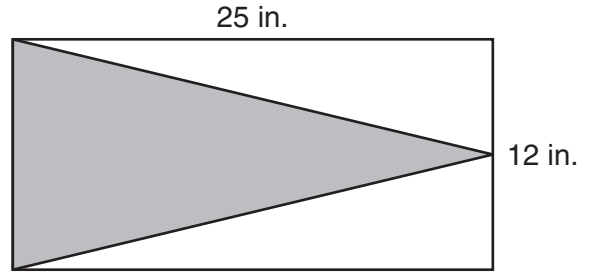
30. Pentagon $ABCDE$ is similar to pentagon $NPQLM$, as shown below.



What is the measure of angle N ?

- A. 60°
- B. 75°
- C. 100°
- D. 120°

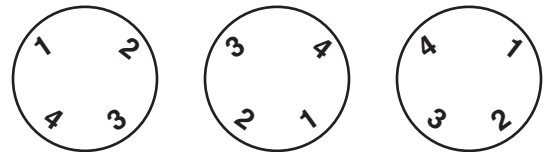
37. Julio made the rectangular banner shown below.



What is the area of the shaded triangle in the banner?

- A. 300 sq. in.
- B. 150 sq. in.
- C. 75 sq. in.
- D. 74 sq. in.

38. A locked door is unlocked by turning the knobs shown below to a particular combination of numbers.

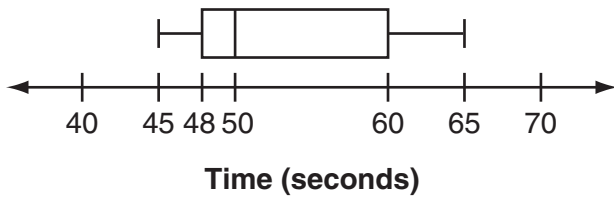


How many possible number combinations are there to unlock the door?

- A. 4
- B. 12
- C. 24
- D. 64



40. Armand recorded the times it took him to complete a race course during several practice sessions. The box-and-whisker plot below represents his data.



Which statement **correctly** describes Armand's times?

- A. At least half of them were 50 seconds or less.
- B. They improved the more he practiced.
- C. Most of them were between 50 and 60 seconds.
- D. Very few of them fell between 48 and 50 seconds.

41. In 30 minutes, a shark can swim about 4000 feet. About how fast, in miles per hour, does the shark swim?

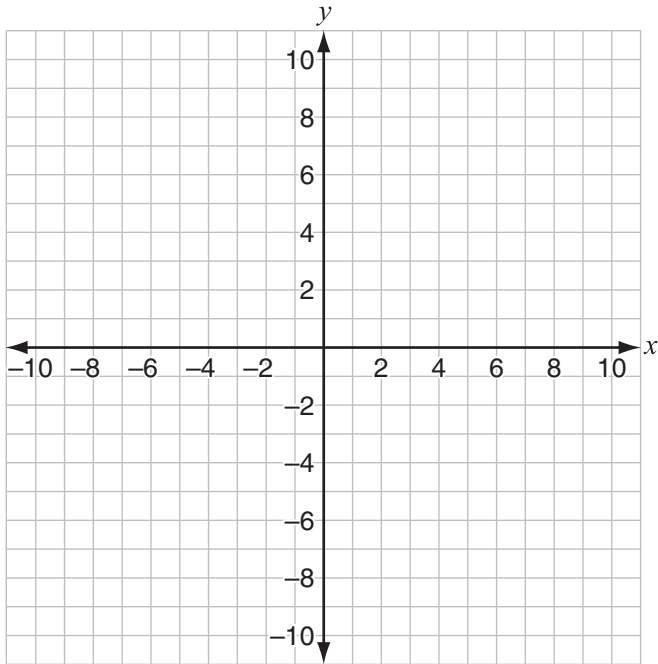
- A. $\frac{3}{4}$ mph
- B. $1\frac{1}{2}$ mph
- C. 4 mph
- D. 8 mph

42. What is the greatest number of lines of symmetry a scalene triangle can have?

- A. 0
- B. 1
- C. 2
- D. 3



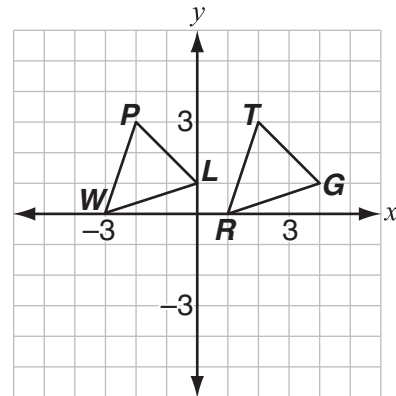
Use the coordinate grid below to answer question 43.



43. Line segment LM is plotted on a grid. The length of the segment is 5 units. Point L is located at $(4, -2)$. Which could be the coordinates of point M ?
- A. $(9, 3)$
 - B. $(4, 5)$
 - C. $(-1, -2)$
 - D. $(-4, -7)$

44. A music group's album sales totaled 12.6 million dollars last year. Which number is equal to 12.6 million dollars?
- A. \$126,000,000
 - B. \$ 12,600,000
 - C. \$ 12,000,006
 - D. \$ 1,200,006

46. On the coordinate grid below, triangle PLW is the image of triangle TGR .



Which phrase describes the transformation from triangle TGR to triangle PLW ?

- A. a translation (slide) four units to the left
- B. a 180° rotation (turn) around point R
- C. a reflection (flip) over the x -axis
- D. a reflection (flip) over the y -axis

Mathematics

Session 3 (Calculator)

This test session includes multiple-choice questions and a question for which you must show your work or write out your answer. You may use a calculator during this session.

Mark your answers to questions in the section marked "Mathematics—Session 3 (Calculator)" in your Student Response Booklet.

50. The table below shows a company's monthly insurance fees.

Month	Insurance Fees
1	\$110
2	\$170
3	\$230
4	\$290

Which expression can be used to find the insurance fees for m months?

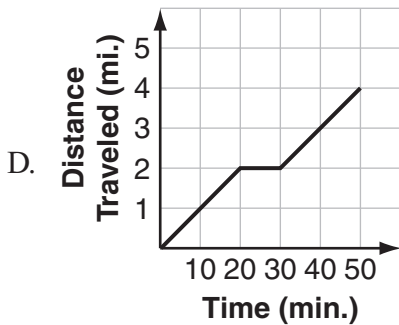
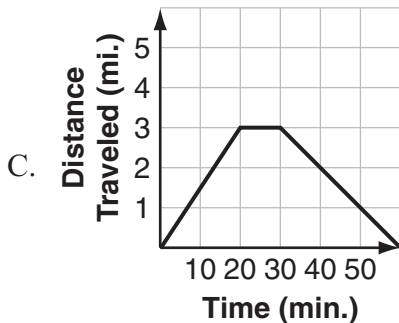
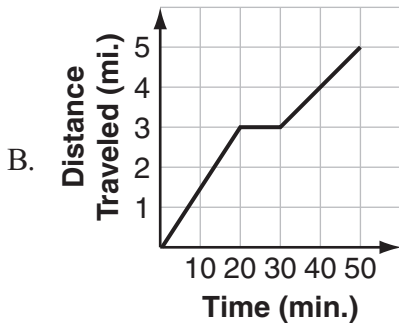
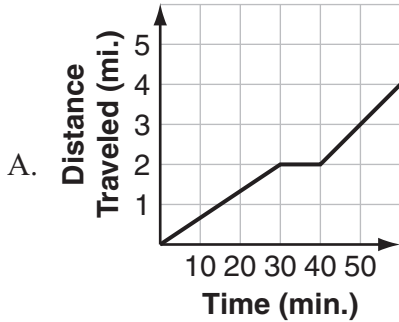
- A. $m + 60$
- B. $50m + 60$
- C. $50m + 70$
- D. $60m + 50$

52. Max has a solid three-dimensional shape. The shape has exactly four vertices. Which term describes Max's shape?

- A. triangular pyramid
- B. triangular prism
- C. square pyramid
- D. cube



56. Anita left home and rode her bike 2 miles in 30 minutes. Then she stopped for lunch for 10 minutes. After lunch, Anita rode 2 miles in 20 minutes to get back home. Which graph **best** represents the total distance Anita traveled over time?



57. Charlotte has the following coins in a bag:

- 36 pennies
- 16 nickels
- 8 dimes
- 12 quarters

She takes out a coin at random. What is the probability that the coin is a nickel?

- A. $\frac{1}{6}$
 B. $\frac{2}{9}$
 C. $\frac{1}{4}$
 D. $\frac{2}{7}$



59. Some car prices at a used car dealership are listed below.

Used Car Prices

\$9,000 \$5,750 \$32,000 \$3,250 \$10,000 \$6,500

About how much does the **mean** price decrease when the outlier price is removed?

- A. \$2,000
 - B. \$3,000
 - C. \$4,000
 - D. \$5,000
60. The chart below shows the number of students from each grade level in a school chorus.

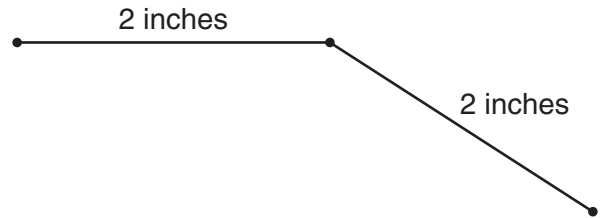
Students in the School Chorus

Grade	Girls	Boys
7th	16	32
8th	24	40

What is the ratio of 8th graders to 7th graders in this school chorus?

- A. $\frac{5}{4}$
- B. $\frac{4}{3}$
- C. $\frac{3}{2}$
- D. $\frac{9}{5}$

61. Linda drew three vertices and two sides of a quadrilateral, as shown below.



She then drew the last vertex and the last two sides of the quadrilateral.

Which figure **cannot** be the quadrilateral Linda drew?

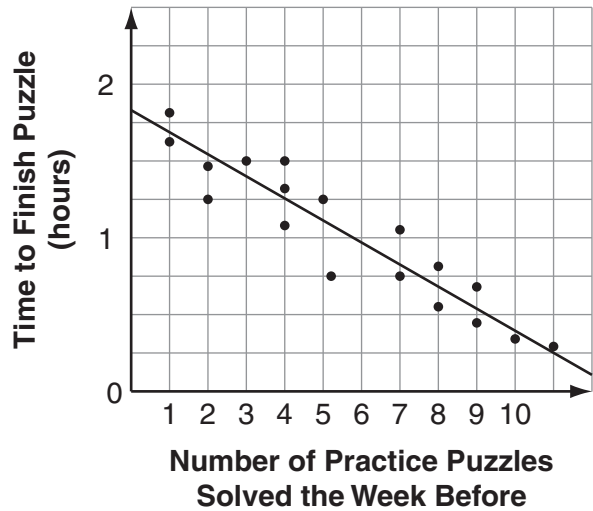
- A. a rectangle
- B. a trapezoid
- C. a kite
- D. a rhombus



66. Miguel is conducting a survey to determine how many students in his school like listening to classical music. Which sample is **most appropriate** for Miguel to survey?
- every 20th person on two pages of a phone book
 - every 20th person at a classical music concert
 - every 20th student in the school's orchestra
 - every 20th student in the school's cafeteria

69. Johanna paid \$10 for supplies to make bracelets. She sells each bracelet for \$2. Which equation can be used to find the profit, p , Johanna makes selling b bracelets? [hint: profit = income – cost of supplies]
- $p = 2b + 10$
 - $p = 2b - 10$
 - $p = 10b + 2$
 - $p = 10b - 2$

70. Ginny did a survey to see how much time it took contestants to finish a puzzle in a competition and the number of practice puzzles each contestant solved the week before to prepare for the competition. The results are shown on the scatter plot below. The best fit line is drawn.



Based on the plot, approximately how many practice puzzles did contestants solve the week before if they finished the competition puzzle in one hour?

- 2
- 4
- 6
- 10



Write your answer in the space provided for it in your Student Response Booklet. Show all of your work.

73. Luis fills a box with books that each have the same weight. The total weight, w , in pounds, of the box filled with b books is shown by the equation below.

$$w = 6b + 2$$

- What is the total weight, in pounds, of a box filled with 4 of the same books? Show or explain how you found your answer.
- On the grid in your Student Response Booklet, graph the equation for boxes filled with 2, 4, 6, 8, and 10 of these books. Be sure to label each axis.
- The maximum weight of a box that Luis can carry is 50 pounds. What is the greatest number of these books that Luis can put into a box and still be able to carry it? Show or explain how you found your answer.