New England Common Assessment Program

Released Items
2008

Grade 7
Mathematics
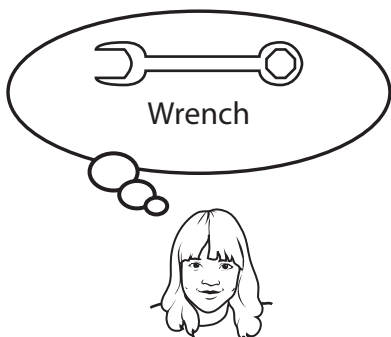
Mathematics

1 Which measure describes a rate?

   A. the distance a car is driven

   B. the number of points a team scores

   C. the amount of money earned per hour

   D. the total mass of 10 bowling pins

2 Jenn is putting her wrenches away. She is missing a wrench with a size between $\frac{5}{8}$ inch and $\frac{3}{4}$ inch.

Wrench

Which size wrench is missing?

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

   B. $\frac{9}{16}$ inch

   C. $\frac{11}{16}$ inch

   D. $\frac{7}{8}$ inch

3 Look at this number sentence.

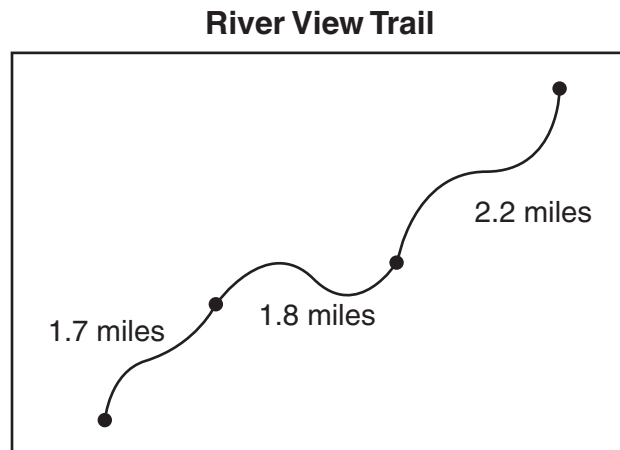$$1400 = 2 \times 2 \times 2 \times 5 \times 5 \times 7$$

Which expression is equivalent to 1400?

   A. $2^3 \times 5^2 \times 7^1$

   B. $2^3 \times 5^2 \times 7^0$

   C. $2^2 \times 5^1 \times 7^1$

   D. $2^2 \times 5^1 \times 7^0$

4 Look at this map.

River View Trail

2.2 miles

1.8 miles

1.7 miles

The Hikers Club is planning to clean River View Trail. The Hikers Club members separated into 3 groups. Each group will clean the same length of trail. How many miles of trail will each group clean?

   A. 1.6

   B. 1.9

   C. 2.3

   D. 2.7

5 Allen has a piece of rope that is 84 inches long. He cuts off one piece that is $43\frac{3}{4}$ inches long and another piece that is $31\frac{5}{8}$ inches long. What is the length of the remaining piece of rope after the two cuts are made?

A. $8\frac{5}{8}$ inches

B. $9\frac{1}{3}$ inches

C. $9\frac{5}{8}$ inches

D. $10\frac{1}{3}$ inches

6 A three-dimensional shape has exactly 4 faces. Which three-dimensional shape could it be?

A. rectangular prism
B. rectangular pyramid
C. triangular prism
D. triangular pyramid

7 Triangle *JKL* is similar to triangle *PQR* ($\Delta JKL \sim \Delta PQR$).
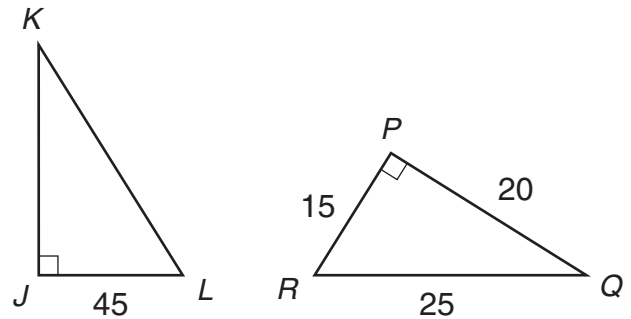
not drawn to scale

Which statement is true?

A. ΔJKL and ΔPQR have the same area.
B. ΔJKL and ΔPQR have the same perimeter.
C. The ratio of the area of ΔJKL to the area of ΔPQR is 3:1.
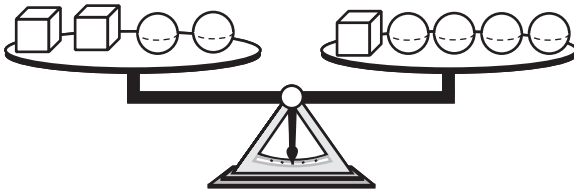D. The ratio of the perimeter of ΔJKL to the perimeter of ΔPQR is 3:1.

8 Look at this equation.

$$m = 5 + 0.25t$$

What is the value of *m* when the value of *t* is 10?
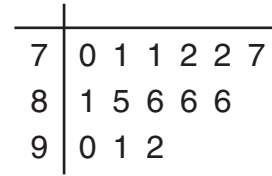
A. 7.50
B. 15.25
C. 20.00
D. 52.50

9 Look at this balanced scale.

Each ⊖ weighs *s* pounds. Each ▢ weighs *c* pounds. Which equation is shown by this scale?

A. $6c = 3s$

B. $4cs = 5sc$

C. $c^2 + s^2 = c + s^4$

D. $2c + 2s = c + 4s$

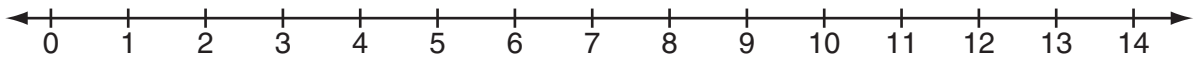**10** This stem-and-leaf plot shows the daily high temperatures for two weeks in July.

```
7 | 0 1 1 2 2 7
8 | 1 5 6 6 6
9 | 0 1 2
```

Key
7 │ 1 represents 71°F

What was the mode temperature for these two weeks?

A. 77°F

B. 83°F

C. 86°F

D. 92°F

3

11 Look at this number line.

Draw a point for the number $\frac{13}{4}$ on the number line.

12 Look at this three-dimensional figure.
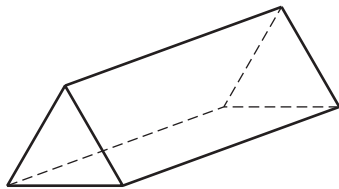
How many vertices does the figure have?

13 A square is divided into two triangles by one of its diagonals.

a. Use one of the words *acute*, *obtuse*, or *right* to tell what kind of triangles are formed. Explain your answer.

Another square is divided into two triangles by one of its diagonals.

b. Use one of the words *equilateral*, *isosceles*, or *scalene* to tell what kind of triangles are formed. Explain your answer.

14 Five people applied for jobs at a store. Only two of these five people will be hired. How many different pairs of people could be hired? Show your work or explain how you know.

15 The cost, in dollars, for school groups to go to a museum can be calculated by using the expression $10t + 5s$, where t is the number of teachers and s is the number of students.

a. Jamestown School has a group of 3 teachers and 40 students going to the museum. How much will it cost, in dollars, for the group from Jamestown School to go to the museum?

b. The total cost for a group from Martinsburg School to go to the museum is $290. If there are 50 students in this group, how many teachers are in the group? Show your work or explain how you know.

c. Fill in the chart below to show three different possible groups of teachers and students that would be charged exactly $125 to go to the museum.

	Number of Teachers	Number of Students	Total Cost
Group 1			$125
Group 2			$125
Group 3			$125

Grade 7 Mathematics Released Item Information

Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
No Tools Allowed			✓	✓	✓									✓	
Content Strand[1]	NO	NO	NO	NO	NO	GM	GM	FA	FA	DP	NO	GM	GM	DP	FA
GLE Code	6-1	6-2	6-3	6-4	6-4	6-3	6-5	6-3	6-4	6-1	6-2	6-3	6-1	6-4	6-3
Depth of Knowledge Code	2	2	1	2	2	2	2	1	1	2	1	1	2	2	3
Item Type[2]	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	SA	SA	SA	SA	CR
Answer Key	C	C	A	B	A	D	D	A	D	C					
Total Possible Points	1	1	1	1	1	1	1	1	1	1	1	1	2	2	4

[1]Content Strand: NO = Numbers & Operations, GM = Geometry & Measurement, FA = Functions & Algebra, DP = Data, Statistics, & Probability

[2]Item Type: MC = Multiple Choice, SA = Short Answer, CR = Constructed Response