GRADE

6

KENTUCKY

K-PREP

Kentucky Performance Rating For Educational Progress

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PROFICIENT & PREPARED FOR
S U C C E S S
KENTUCKY DEPARTMENT OF EDUCATION

MATH
SAMPLE
ITEMS

Spring 2013

1

The chart shows folder prices at different stores.

Folder Prices

Store	Cost
A	7 for 42¢
B	6 for 50¢
C	8 for 56¢
D	9 for 72¢

Which store has an exact rate of 8¢ per folder?

A Store A

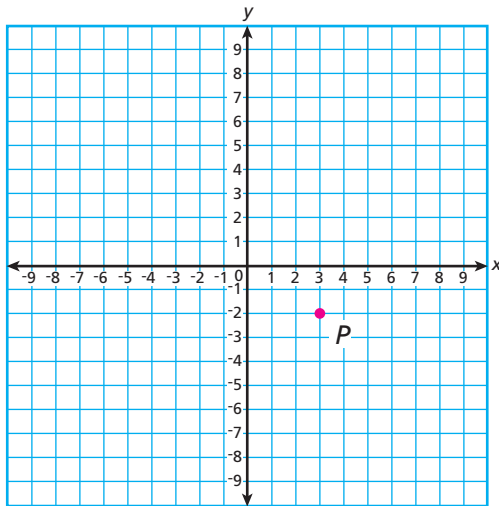**B** Store B

C Store C

D Store D

2

According to the 2010 Census, Bracken County, Kentucky, had 101 fewer people than Gallatin County. Let p represent the number of people in Bracken County. Which expression has a value equal to the number of people in Gallatin County based on the 2010 Census?

A $p + 101$

B $p - 101$

C $101 - p$

D $101p$

3

The graph below shows point *P*.

Which coordinates for points *M* and *N* would form right △*MNP* with a right angle at point *P* and side lengths of 4 units and 5 units?

A $M(^-1, ^-2); N(3, ^-6)$

B $M(3, ^-7); N(^-2, ^-2)$

C $M(^-1, ^-6); N(^-2, 3)$

D $M(^-1, ^-2); N(3, 3)$

4

Each morning Shania puts $\frac{3}{4}$-cup of cereal in her bowl. The cereal box contains 9 cups of cereal. How many $\frac{3}{4}$-cups, *x*, are equivalent to 9 cups?
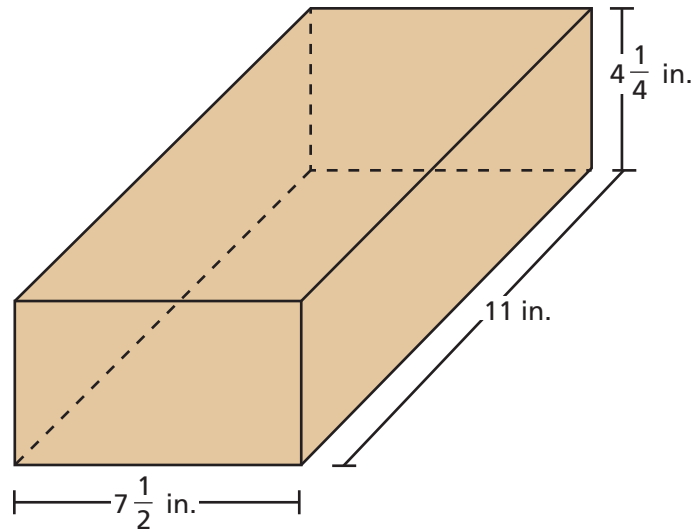
A $9 \bullet \frac{3}{4} = x; x = 6\frac{3}{4}$

B $9 - \frac{3}{4} = x; x = 8\frac{1}{4}$

C $9 + \frac{3}{4} = x; x = 9\frac{3}{4}$

D $9 \div \frac{3}{4} = x; x = 12$

5

Myrna has a photograph storage box in the shape of a right rectangular prism, as shown.

Photograph Storage Box

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

11 in.

$7\frac{1}{2}$ in.

What is the volume, in cubic inches, of the photograph storage box? ($V = lwh$)

A $22\frac{3}{4}$

B $45\frac{1}{2}$

C $239\frac{3}{4}$

D $350\frac{5}{8}$

6

Part A What is the opposite of 8? Explain your thinking.

Part B Explain if $-(^-8)$ and $-|^-8|$ result in the same value.

RUBRIC	
Score Point 2	• You complete all components of the question and communicate ideas clearly. • You demonstrate an understanding of the concepts and/or processes. • You provide a correct answer using an accurate explanation as support.
Score Point 1	• You provide a partially correct answer to the question and/or address only a portion of the question. • You demonstrate a partial understanding of the concepts and/or processes.
Score Point 0	• Your answer is totally incorrect or irrelevant.
Blank	• You did not give any answer at all.
Note: No part can be incomplete or incorrect and receive full credit.	

Correct Answer:

Part A −8
The number 8 is 8 units to the right of 0 on a number line so the opposite of 8 would be the number that is 8 units to the left of 0 on a number line which is -8.

OR similar explanation

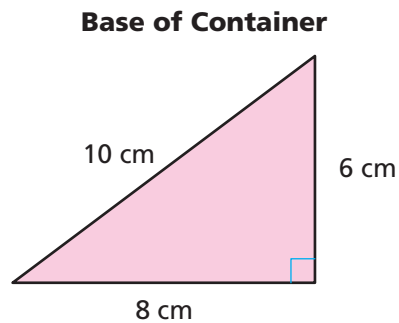**Part B** No, $-(-8)$ and $-|-8|$ do not result in the same value.

$-(-8) = 8$ and $-|-8| = -8$; One deals with the opposite of an opposite and the other is the opposite of the absolute value of the opposite of 8.

OR similar explanation

7

A container for a perfume bottle is in the shape of a right triangular prism. The container has a height of 15 centimeters. The dimensions of the base of the right triangular prism are shown below.

Base of Container

10 cm

6 cm

8 cm

Part A On your answer document, draw a net for the right triangular prism based on the given dimensions. Make sure to label the length and width of each rectangle and the base length and height of each triangle.

Part B A smaller right triangular prism container with dimensions that are half the length of those used for the net in **part A** is used for a smaller bottle of perfume. Explain if the surface area of the smaller prism is half the surface area of the larger prism.

8

The temperature, in degrees Fahrenheit, in Little City was recorded at the same time for 14 days. The results are listed below.

45°, 52°, 45°, 48°, 53°, 47°, 45°, 52°, 53°, 56°, 56°, 53°, 45°, 48°

Part A On your answer document, display the data in a dot plot. Label the graph. Make sure to include a title and scale.

Part B Suppose the dot plot you created in **part A** was given first. Explain how you could create the list of the temperatures for the 14 days.

Part C Display the data in a box plot. Label the title, scale, median, lower and upper quartiles, and extremes.

Part D Considering the measures of central tendency, explain if the same information can be determined from the dot plot you created in **part A** and the box plot you created in **part C**.

Mathematics

Item Information

Question Number	Key	DOK*	KCAS Primary Standard**
1	D	2	6.RP.2
2	A	1	6.EE.2.a
3	D	2	6.NS.8
4	D	2	6.EE.6
5	D	1	6.G.2
6	NA	2	6.NS.6.a
7	NA	3	6.G.4
8	NA	3	6.SP.4

*DOK is the abbreviation for Depth of Knowledge. Please note that DOK is associated to the complexity level of an assessment item and is not aligned to the standard. Further information regarding DOK can be accessed on the Kentucky Department of Education Web site: http://education.ky.gov/curriculum/docs/Pages/Content-Specific-Core-Content-for-Assessment-DOK-Support-Materials.aspx

**Further information regarding Common Core Standards can be accessed on the Common Core Web site: http://www.corestandards.org