



GRADE

7

KENTUCKY

K-PREP

Kentucky Performance Rating For Educational Progress



MATH SAMPLE ITEMS

Spring 2013



1

Sara studied a map that showed the routes people followed to explore and settle in Kentucky during the 1700s. The scale on the map showed that $\frac{1}{2}$ inch represents 25 miles. On the map, Sara measures the length of the Wilderness Road to be 4 inches. Based on Sara's measurement, how long was the Wilderness Road, in miles?

- A 50
- B 100
- C 150
- D 200

2

When the expression $\frac{2(3 - 2x)}{-4}$ is simplified, how does it compare to x ?

- A It is $\frac{3}{2}$ more than x .
- B It is $\frac{3}{2}$ less than x .
- C It is $\frac{3}{2}$ more than twice x .
- D It is $\frac{3}{2}$ less than one-half of x .

3

A fraction $\frac{n}{d}$ is created by randomly selecting the value for n from the set $\{-2, 0, 2\}$ and randomly selecting the value for d from the set $\{0, 2, 4\}$. How many different fractions can be created that are rational numbers?

- A 3
- B 4
- C 6
- D 9

4

Chris won at most 300 tickets at an arcade game. He spent 128 tickets on a ball and the rest on gum. Each piece of gum was 25 tickets. Which inequality can be used to determine the greatest number of pieces of gum Chris could have purchased?

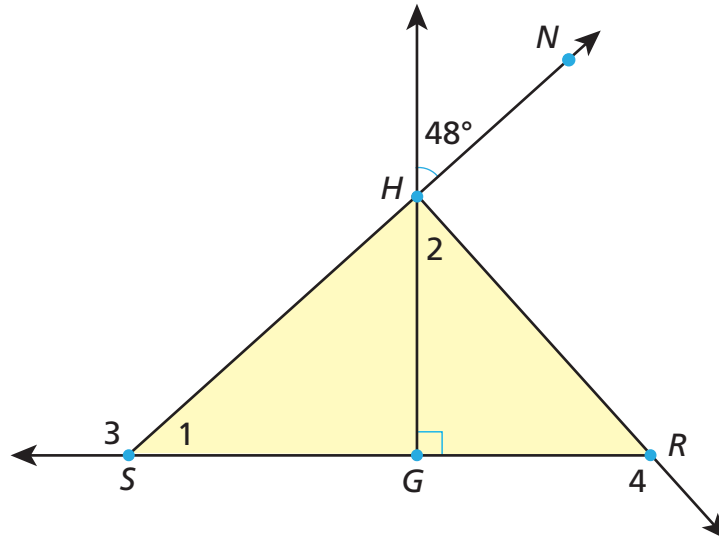
- A $128 + 25g \leq 300$
- B $128 + 25g \geq 300$
- C $128 - 25g \leq 300$
- D $128 - 25g \geq 300$



5

Nathan knows the following information about the diagram shown.

- \overline{GH} intersects \overline{SN} at point H
- $\angle 1$ and $\angle 2$ are congruent
- $\angle 3$ and $\angle 4$ are two of the exterior angles of $\triangle SHR$



Based on this information, what is the sum of the measures of $\angle 3$ and $\angle 4$?

- A 276°
- B 270°
- C 264°
- D 260°

**6**

Each number in the table below represents the number of employees at different stores in two shopping centers.

Number of Employees at Each Store

Shopping Center E	Shopping Center K
6	8
8	9
12	11
17	14
20	16
23	21
29	23
37	26

Part A Determine the interquartile range for numbers of employees at each shopping center. Show your work or explain your thinking.

Part B Which shopping center would you expect to have a greater variability in regard to numbers of employees? Show your work or explain your thinking.



7

This month Frankie wants a watch that costs \$28.75, not including tax. This price includes a 15% increase from the price of the same watch the previous month.

Part A What was the price of the watch the previous month? Show your work or explain your thinking.

Part B Next month, the price of the watch will increase by 20% from this month's price. What will be the price of the watch next month? Show your work or explain your thinking.



Part A On your answer document, draw a coordinate plane that uses only Quadrant 1.

- Label the x -axis with the numbers 0 through 10 using increments of 1.
- Name the x -axis “Time (minutes).”
- Label the y -axis with the numbers 0 through 100 using increments of 10.
- Name the y -axis “Volume (gallons).”

The coordinate plane you draw represents the amount of fuel in a tank as it is filled.

Part B Plot and label the point (8, 40) on your grid. Explain what the point represents.

Part C Plot and label a second point on your grid using a proportional relationship with the point (8, 40). Explain why the point you plotted represents a proportional relationship with the point (8, 40).

Part D Based on the proportional relationship you established in **part B** and **part C**, what is the volume, in gallons, after 12 minutes? Explain your answer.

Item Information

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

*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>