UNBRIDLED
LEARNING
THE VISION FOR
KENTUCKY'S
FUTURE

GRADE
6

KENTUCKY

K-PREP
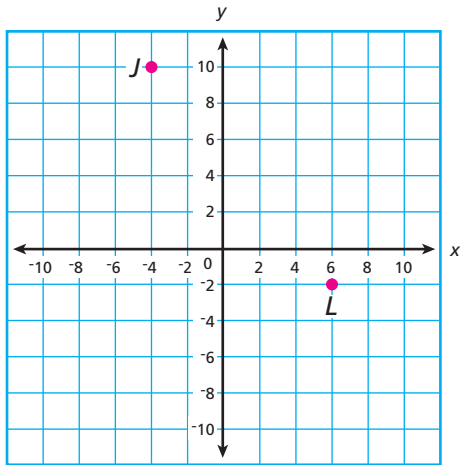### Kentucky Performance Rating For Educational Progress

EVERY CHILD

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

MATH
SAMPLE
ITEMS

Spring 2012

1

Jamal wants to draw a right triangle and label it *JKL*. He has already plotted points *J* and *L*.

The location of point *K* is:

- 10 units away from point *J*

- 12 units away from point *L*

Which coordinate pair could be the location of point *K*?

A $(^-2, ^-4)$

B $(^-4, ^-2)$

C $(10, 6)$

D $(6, 10)$

2

Mr. Lee has a small apple orchard. There are 7 rows of trees with *n* trees in each row. Which two expressions show different ways to find the total number of trees in Mr. Lee's apple orchard?

A $n + n + n + n + n + n + n$ and $7 + n$

B $n + n + n + n + n + n + n$ and $7 \cdot n$

C $n \cdot n \cdot n \cdot n \cdot n \cdot n \cdot n$ and $7 + n$

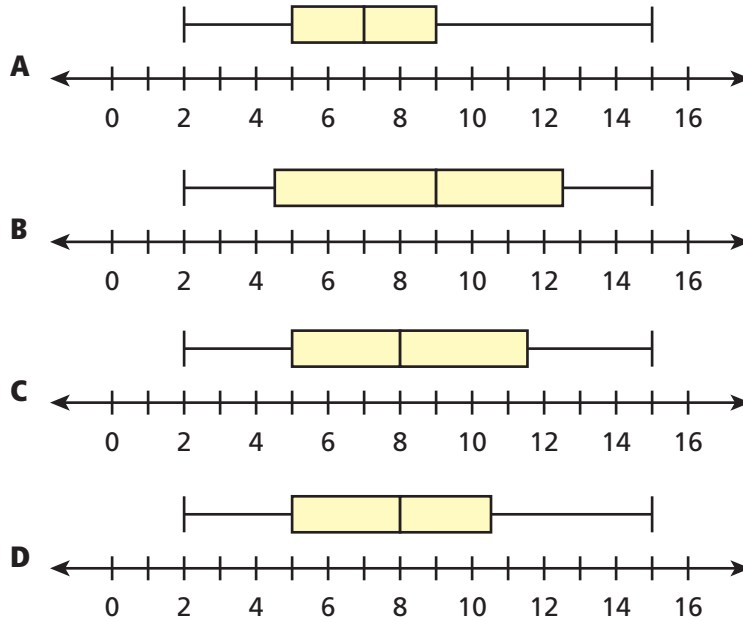**D** $n \cdot n \cdot n \cdot n \cdot n \cdot n \cdot n$ and $7 \cdot n$

3

A newspaper editor monitored the number of visits to his Web site for 13 consecutive hours. The list below shows the number of visits for each of the 13 hours.

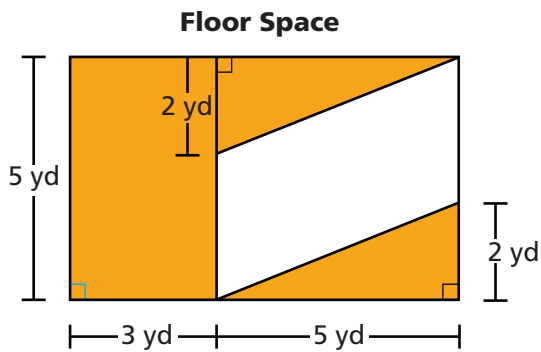$$\left[3,\ 2,\ 8,\ 5,\ 9,\ 12,\ 15,\ 8,\ 5,\ 13,\ 11,\ 9,\ 7\right]$$

Which box plot correctly displays the data about the number of visits to the editor's Web site?

A

B

C

D

4

A worker will install carpet on the shaded part of the rectangular floor pictured below.

Floor Space

What is the total amount of carpet, in square yards, the worker needs?

A 40

B 25

C 22

D 20

5

If only the values within the brackets are substituted for d, which list contains only values that would make the inequality $d + 2\frac{3}{4} < 15$ true?

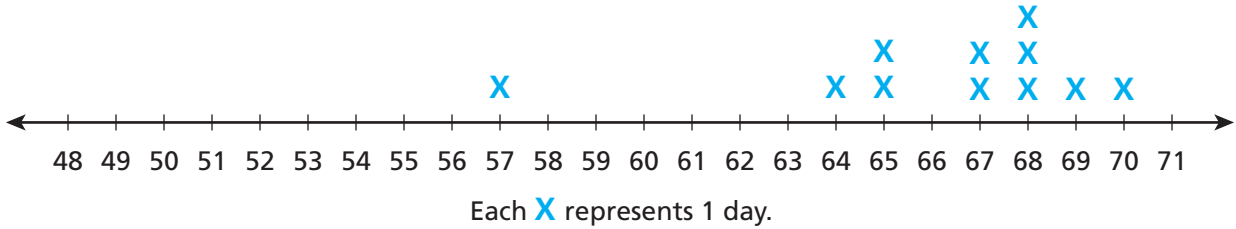$$\left\{6.5,\ 10,\ 12\frac{1}{2},\ 16.5,\ 17\frac{3}{4}\right\}$$

A 6.5 and 10

B 6.5, 10, and $12\frac{1}{2}$

C $12\frac{1}{2}$, 16.5, and $17\frac{3}{4}$

D 16.5 and $17\frac{3}{4}$

6

Coach Wendell recorded the number of football players at training camp each day for several days on the dot plot below.

Number of Football Players Each Training Camp Day

															X								

X represents the dot plot with marks:
- 57: X
- 64: X
- 65: X X
- 67: X
- 68: X X
- 69: X
- 70: X

Number line: 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71

Each **X** represents 1 day.

Part A What is the difference between the interquartile range and the range of the data? Show your work or explain your thinking.

Part B Explain how the answer you gave in **part A** would be affected if you deleted the lowest data point.

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 The range is 13, 70 − 57 = 13, the interquartile range is 3, 68 − 65 = 3. The difference is 10, 13 − 3 = 10.

Part B The range would be 6, 70 − 64 = 6, the interquartile range would be 3, 68 − 85 = 3. The difference would be 3, 6 − 3 = 3. So my answer in **part B** would be reduced by 7 since 10 − 3 = 7.

7

A package of six construction toys costs $14.94, not including tax. If purchased separately, each truck is $2.99, not including tax. What is the difference in the unit rate and the individual rate? Show your work or explain your thinking.

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:

The cost for 6 trucks is $14.94 which results in each truck costing $2.49.
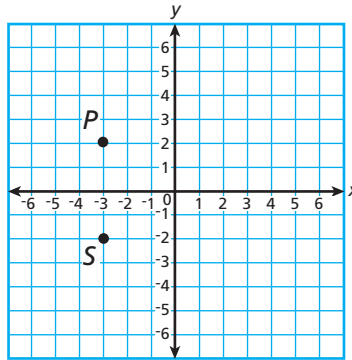
$14.49 \div 6 = 2.49$

Individually the trucks are $2.99 so the difference between buying the trucks individually or in bulk is $0.50.

$2.99 - 2.49 = 0.50$

8

A coordinate plane with points *P* and *S* is shown below.

Part A Plot point *Q* so that it is a reflection of point *P* across the *y*-axis. What are the coordinates of point *Q*? Explain your thinking.

Part B The coordinates of point *S* are (⁻3, ⁻2). Explain how point *S* is related to point *P*.

Part C Point *R* is plotted on the coordinate graph so that line segments *SR* and *PQ* are a reflection of each other. What would have to be the coordinates of point *R*? Explain your thinking.

Item Information

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

*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 website: http://www.education.ky.gov/kde/instructional+resources/curriculum+documents+and+resources/core+content+for+assessment/core+content+for+assessment+4.1/content+specific+core+content+for+assessment+dok+support+materials.htm.

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