

6<sup>th</sup> Grade Advanced 4<sup>th</sup> Six Weeks Test Review

① Which expression is equivalent to  $4(3 + 5) - 3 \cdot 9^2$ ?

A  $14 \cdot 81 = 1134$

B  $17 - (27)^2 = 17 - 729 = -712$

C  $12 + 20 - 54 = 32 - 54 = -22$

**D**  $4(8) - 3 \cdot 81$

*Handwritten work:*  
 $4(8) - 3 \cdot 81$   
 $32 - 243$   
 $-211$

④ Which expression is equivalent to  $30 \div (3 + x)$ ?  $x = 2$

F  $(3 + x) \div 30 = 5 \div 30$

**G**  $30 \div (x + 3) = 30 \div 5$

H  $(3 \div 30) + x = \frac{1}{10} + 2$

J  $30 \div 3 + 30 \div x = 10 + 15$

*Handwritten work:*  
 pick a # for x  
 $x = 2$   
 $30 \div (3 + 2)$   
 $30 \div 5$   
 $6$

② Which two expressions are equivalent?

**F**  $9(6 + x)$   
 $9 \cdot 6 + 9 \cdot x$

G  $x + (8 \cdot 9)$   
 $(x + 8) \cdot 9$

H  $8 \cdot 6 \div x$   
 $8 \cdot x \div 6$

J  $6 \cdot x + 3$   
 $6 \cdot (x + 3)$

*Handwritten work:*  
 Arrows pointing from  $9(6+x)$  to  $9 \cdot 6 + 9 \cdot x$

⑤ What value is equivalent to  $3^4 - 2^3 \cdot (5 - 2) - 60$ ?

**A** -3

B -66

C 159

D -21

*Handwritten work:*  
 $3 \cdot 3 \cdot 3 \cdot 3$   
 $9 \cdot 9$   
 $81 - 2 \cdot 2 \cdot 2$   
 $81 - 8 \cdot (5 - 2) - 60$   
 $81 - 8 \cdot 3 - 60$   
 $81 - 24 - 60$   
 $57 - 60$   
 $-3$

③ What is the value of the expression shown?

$24 - 5^2$   
 $24 - 25$   
 $-1$

*Handwritten work:*  
 $24 - 5^2$   
 $24 - 25$   
 $-1$  (boxed)

⑥ Which expression is equivalent to  $(6 \cdot p) + 3$ ? pick a value for p

F  $3 - (6 \cdot p) = 3 - 12 = -9$

**G**  $3 + (p \cdot 6) = 3 + 12 = 15$

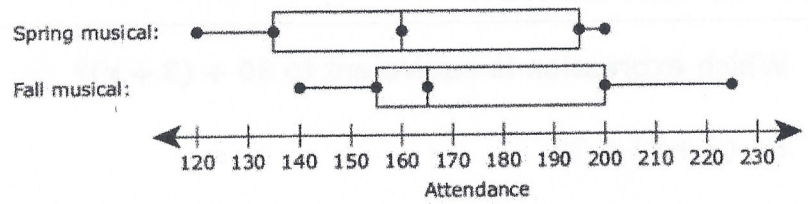
H  $6 + 3 \cdot p$   $6 + 3 \cdot 2 = 12$

J  $6 \cdot (p + 3)$   $6 \cdot 5 = 30$

*Handwritten work:*  
 pick a value for p  
 $p = 2$   
 $(6 \cdot 2) + 3$   
 $12 + 3 = 15$

7

The box plots summarize the attendance for the spring musical and the fall musical. Each musical was performed for six evenings.



- Which statement best describes the data represented in the box plots?
- F The range in attendance for the fall musical is 85.  $225 - 140 = 85$ .
  - G The interquartile range for the spring musical is 45.  $195 - 135 = 60$
  - H For half the evenings at the fall musical, the attendance was less than 160 people. *False*
  - J For half the evenings at the spring musical, the attendance was between 155 and 200 people. *NO, 135 - 195 people would have been correct*

8

Patricia recorded the prices of watches at a store. The prices are shown in the table.

- 12
- 15
- 16
- 16 *median*
- 20
- 22
- 24
- 27

Watches	
Price (dollars)	
<del>15</del>	
<del>22</del>	
16	
<del>24</del>	
<del>16</del>	
20	
<del>12</del>	
27	

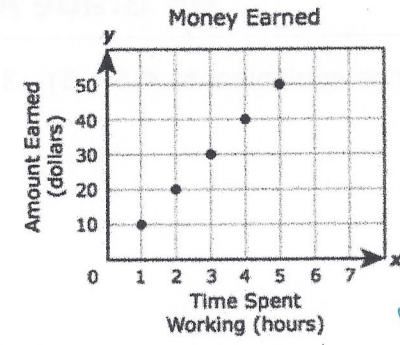
What is the median price of the watches in dollars?  
must be in order from least to greatest!

18

9

The graph shows the amount of money earned by an employee based on the time he spent working.

- (1, 10)
- (2, 20)
- (3, 30)
- (4, 40)
- (5, 50)



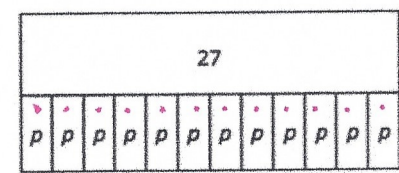
Independent values are x values  
Dependent values are y values

Which list shows the dependent quantities in the graph?

- F 10, 20, 30, 40, 50
- G 1, 2, 3, 4, 5
- H 11, 22, 33, 44, 55
- J 101, 202, 303, 404, 505

10

Holly bought a magazine subscription for a year. She paid \$27. Holly wanted to find the price,  $p$ , of the subscription each month. She created the model shown to help find this price.



total of 12 payments

What was the price of the subscription each month?

- F \$39.00
- G \$2.25
- H \$324.00
- J \$22.50

$27 \div 12 =$

$$\begin{array}{r}
 2.25 \\
 12 \overline{) 27.00} \\
 \underline{-24} \phantom{00} \\
 30 \phantom{00} \\
 \underline{-24} \phantom{00} \\
 60 \phantom{00} \\
 \underline{-60} \\
 0
 \end{array}$$



11

The table shows the relationship between  $d$ , the amount of money Alice has at the beginning of each day, and  $w$ , the amount of money she has after riding the bus to work.

Alice's Money

Money at the Beginning of the Day, $d$	Money After Riding the Bus to Work, $w$
\$15.75	\$14.50
\$9.50	\$8.25
\$5.25	\$4.00
\$30.00	\$28.75

each day she has 1.25 less than she had at the beginning

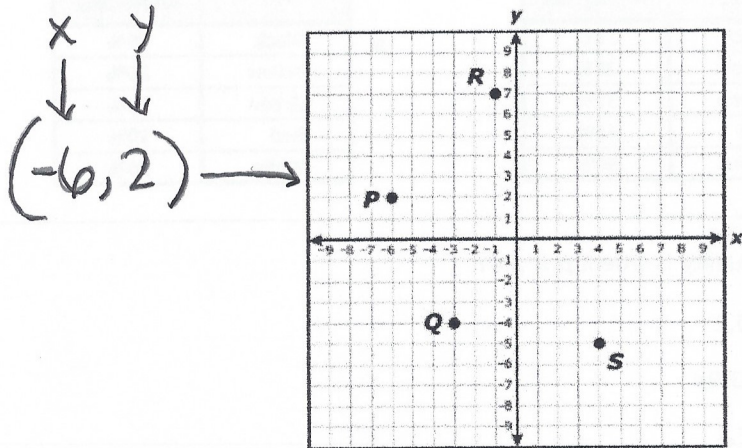
$w = d - 1.25$

Which equation represents the relationship in the table?

- F  $w = d + 1.25$
- G  $w = 14.50d + 1.25$
- H  $w = 15.75d - 1.25$
- J  $w = d - 1.25$

12

The coordinate grid shows points P, Q, R, and S. All the coordinates for these points are integers.

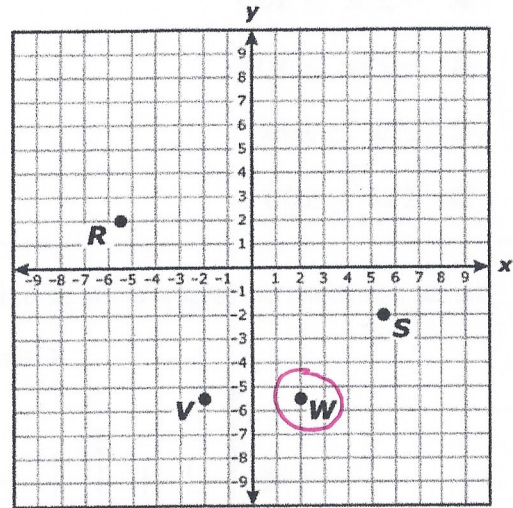


What is the value of the x-coordinate of point P?

-6

13

Four points are graphed on the coordinate grid.



Which point is best represented by the ordered pair (2, -5.5)?

- F Point W
- G Point V
- H Point S
- J Point R

right 2, down 5.5

14

The list shows the numbers of employees in the nine departments at a company.

14, 23, 6, 54, 30, 26, 17, 3, 26

What is the range of the numbers of employees in these departments?

- A 23
- B 51
- C 26
- D 18

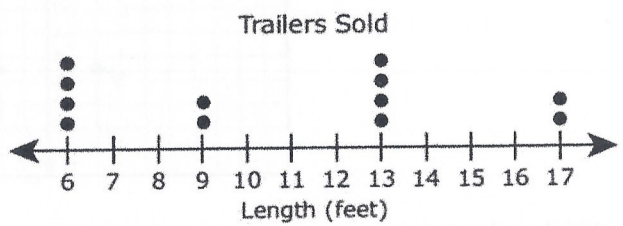
largest - smallest

$54 - 3 = 51$

15 Which inequality is true when  $x = 4$ ?

- A  $-25x > 100$   $-100 > 100$
- B  $-25x \geq 100$   $-100 \geq 100$
- C  $25x < 100$   $100 < 100$
- D**  $25x \leq 100$   $100 \leq 100$

16 The dot plot shows the lengths of the 12 trailers sold at a store last month.



Which statement about the data is true?

- F The interquartile range is 7, and the range is 17.
- G** The interquartile range is 7, and the range is 11.
- H The interquartile range is 2.75, and the range is 17.
- J The interquartile range is 2.75, and the range is 11.

$range = 17 - 6 = 11$   
 $IQR = 13 - 6 = 7$

6, 6, 6 | 6, 9, 9 | 13, 13, 13 | 13, 17, 17  
 $Q_1$                       median                       $Q_3$

17 What value of  $x$  makes this equation true?

$$\begin{array}{r} -90 \neq -100 + x \\ +100 \quad +100 \\ \hline 10 \neq x \end{array}$$

- A -10
- B** 10
- C -190
- D 190

18 Shemar bought a bag of marbles. He took the marbles out of the bag one at a time. He recorded the color of each marble in this tally chart.

Marbles

Color	Number of Marbles
Black	THH THH THH
Yellow	THH THH
Green	THH THH II
Red	THH
White	THH III

total marbles = 50  
 $15/50 = 30\%$   
 $10/50 = 20\%$   
 $12/50 = 24\%$   
 $5/50 = 10\%$   
 $8/50 = 16\%$

In which table do the percentages represent the relative frequency of these marble colors?

Marbles

Color	Percentage of All Marbles
Black	15%
Yellow	10%
Green	12%
Red	5%
White	8%

A

Marbles

Color	Percentage of All Marbles
Black	10%
Yellow	16%
Green	20%
Red	24%
White	30%

C

Marbles

Color	Percentage of All Marbles
Black	15%
Yellow	25%
Green	37%
Red	42%
White	50%

B

Marbles

Color	Percentage of All Marbles
Black	30%
Yellow	20%
Green	24%
Red	10%
White	16%

**D**

19 Which inequality is true if  $p = 3.4$ ?

- F  $3p < 10.2$   $3.4(3) < 10.2$   $10.2 < 10.2$  NOPE
- G  $13.6 \leq 3.9p$   $13.6 \leq 3.9(3.4)$   $13.6 \leq 13.26$  NOPE
- H  $5p > 17.1$   $5(3.4) > 17.1$   $17 > 17.1$  NOPE
- J**  $8.5 \geq 2.5p$   $8.5 \geq 2.5(3.4)$   $8.5 \geq 8.5$  YES!