Name _____ Date ____/____/_____

Math 8 Problem Set #14

1. What is the solution to the equation shown below?

$$\frac{2}{3}x + 5 = 1$$

   a. x = –6

   b. x = 4

   c. x = –4.5

   d. x = 9

2. Which equation has a solution of x = 5?

   a. 120x - 17 = 583

   b. 100x + 50 = 5050

   c. 12x + 26 = 80

   d. 4x - 10 = 30

3. Simplify the expression

   2(3x - 5) + 4(-6x + 1)

   a. -18x - 6

   b. -18x - 14

   c. 16x + 14

   d. 16x - 6

4. The quotient of (9.2×10^6) and (2.3×10^2) expressed in scientific notation is

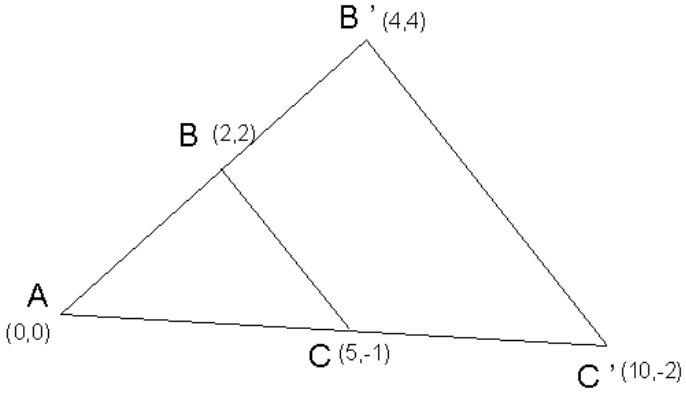
   1. 4,000

   2. 40,000

   3. 4×10^3

   4. 4×10^4

5.



Triangle ABC was dilated to form Triangle A'B'C'.

What was the scale factor used?

a. 2

b. 4

c. -2

d. -4

6. Simplify:
$y \times y^{12}$

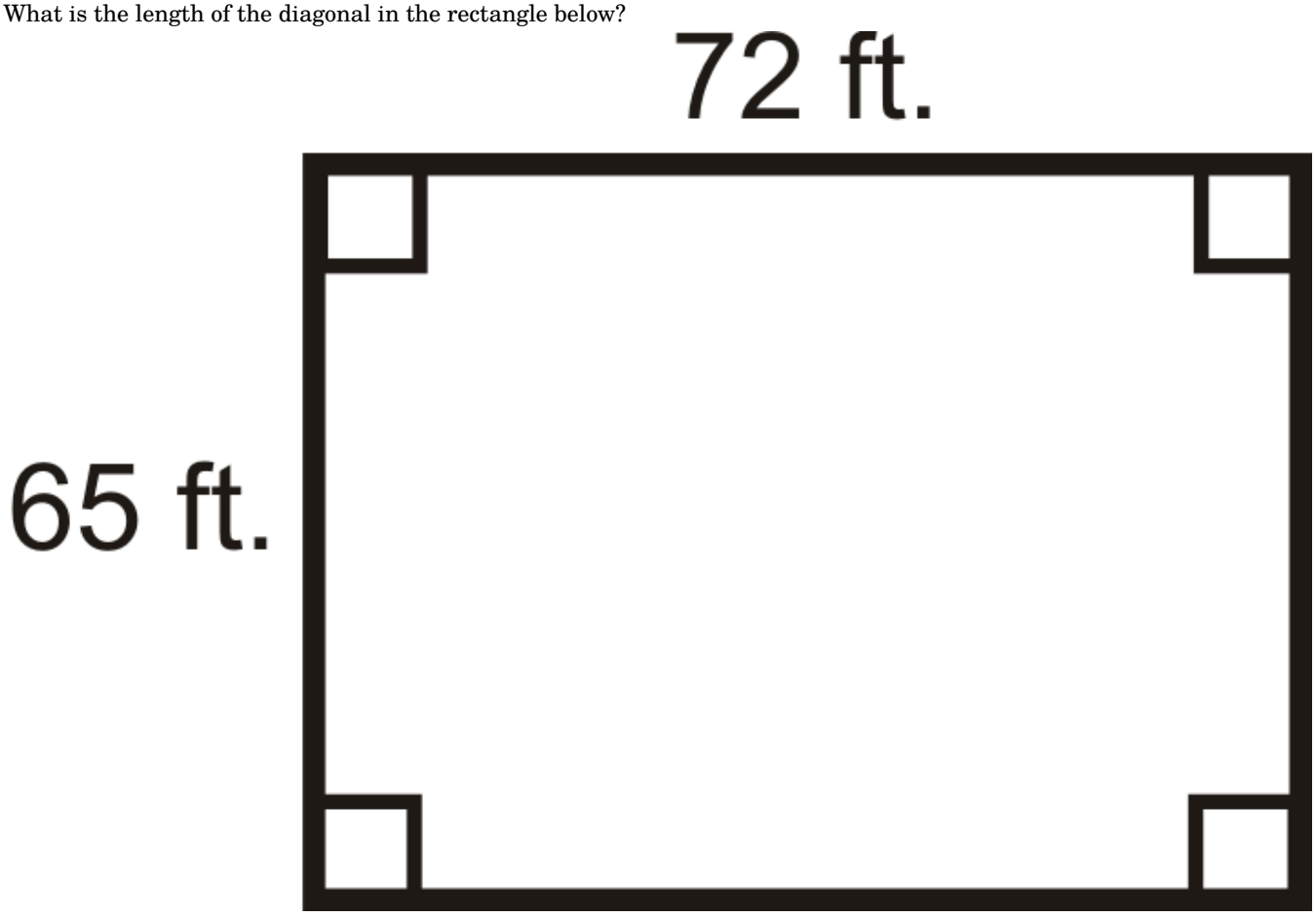
a. y^{12}

b. y^{13}

c. $2y^{12}$

d. $2y^{13}$

7. What is the length of the diagonal in the rectangle below?



a. 137 ft

b. 31 ft

c. 97 ft

d. 98 ft

8. Simplify:
-5.5 - 10 + (-3.8) + 10 ½

a. -1.2

b. -8.8

c. 8.8

d. 1.2

9. ____ The name of the side of the triangle opposite the right angle is called: A) the leg B) the right side C) Pythagorus D) hypotenuse

a. the leg

b. the right side

c. Pythagorus

d. hypotenuse

10. Solve:
$7x - 3 = 5x + 5$

a. $x = 3$

b. $x = 4$

c. $x = 1$

d. $x = 0.5$

11. Solve:
$m - 1\frac{1}{2} = -\frac{5}{4}$

a. $-\frac{1}{4}$

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

c. $\frac{3}{4}$

d. $-\frac{3}{4}$

12. Solve: $\frac{3}{5}c + 4 = 13$

a. 15

b. 7

c. 9

d. -15

13. Solve:
$-21 - 8a = -1 + 6(4 - 5a)$

a. 2

b. -2

c. 0.5

d. -0.5

14. Which equations with exponential expressions are true?
Select **all** that apply.

a. $3^3 = 3 \cdot 3$

b. $5^2 = 5 \cdot 5$

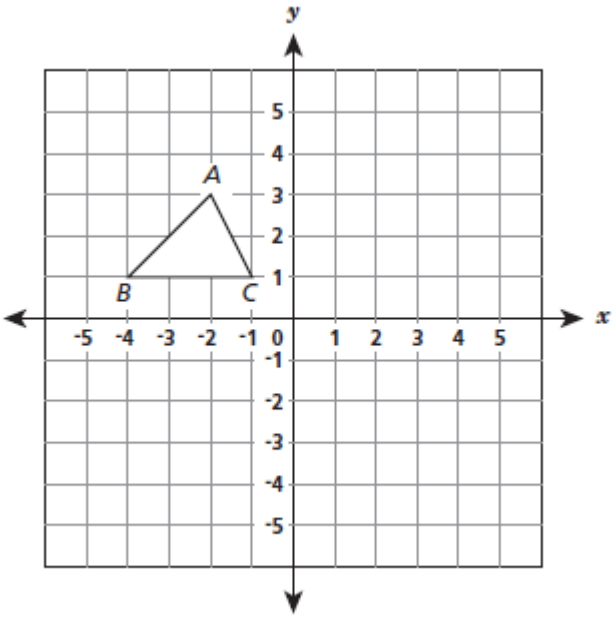
c. $5^4 = 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4$

d. $7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 = 6^7$

e. $7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 = 7^6$

f. $7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 = 7^7$

15. If $\triangle ABC$ is rotated 90° clockwise about the origin, what will be the new coordinates of vertex B?



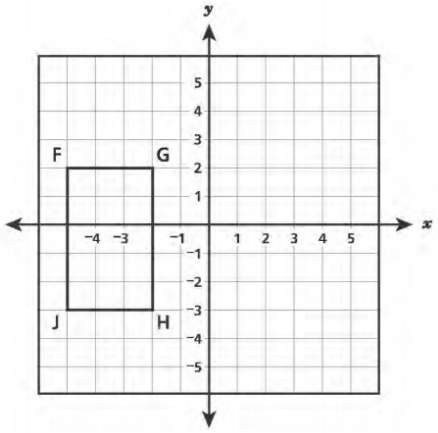
a. (–1, –4)

b. (1, 4)

c. (4, 1)

d. (4, –1)

16. Rectangle FGHJ shown below, is translated 6 units right and 1 unit up to produce rectangular F'G'H'J'.



Which statement about the side lengths of rectangle F'G'H'J' is true?

a. F'G' = 3 and G'H' = 5

b. F'G' = 3 and G'H' = 6

c. F'G' = 9 and G'H' = 5

d. F'G' = 9 and G'H' = 6

17. A reflection changes the _____ of a figure.

a. side lengths

b. angle measurements

c. size

d. location

18. The lengths of the sides of a right triangle can be

1. 9, 12, 15
2. 8, 10, 13
3. 5, 5, 10
4. 4, 5, 6

19. How is 0.00001578 written in scientific notation?

a. $1.578 \bullet 10^{-5}$

b. $1.578 \bullet 10^{-6}$

c. $15.78 \bullet 10^{-5}$

d. $15.78 \bullet 10^{5}$

20. Solve:
$-\frac{1}{3}x + \frac{3}{4}x = 10$

a. $\frac{10}{13}$

b. 2

c. 24

d. -24

21. What is the product of 8.4×10^{8} and 4.2×10^{3} written in scientific notation?

1. 2.0×10^{5}
2. 12.6×10^{11}
3. 35.28×10^{11}
4. 3.528×10^{12}