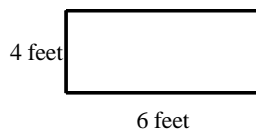


*P.I. G.G.39: Investigate, justify, and apply theorems about special parallelograms (rectangles, squares) involving their angles, sides, and diagonals*

1. What is the area of this rectangle?



- [A] 24 square feet      [B] 10 square feet  
[C] 23 feet              [D] 24 feet

[1] \_\_\_\_\_

2. A rectangle is 9.9 inches long and 2.8 inches wide. Find its area.

- [A] 12.7 in.              [B] 27.72 in.<sup>2</sup>  
[C] 25.4 in.              [D] 277.2 in.<sup>2</sup>

[2] \_\_\_\_\_

3. Find the area of the rectangle with the given base and height.  
2 yd 24 in., 12 yd

- [A] 29 yd<sup>2</sup> 12 in.<sup>2</sup>      [B] 32 yd<sup>2</sup>  
[C] 24 yd<sup>2</sup> 48 in.<sup>2</sup>      [D] 48 yd<sup>2</sup> 24 in.<sup>2</sup>

[3] \_\_\_\_\_

NAME: \_\_\_\_\_

4. Find the area of the rectangle with the given base and height.  
3 ft 8 in., 4 in.

[4] \_\_\_\_\_

5. A rectangle is 20 in. tall. Its area is 260 in.<sup>2</sup>.  
What is its width?

- [A] 15 in.                      [B] 68 in.  
[C] 66 in.                      [D] 13 in.

[5] \_\_\_\_\_

6. The area of a rectangle is 168 square centimeters. If its width is 14 centimeters, what is its length?

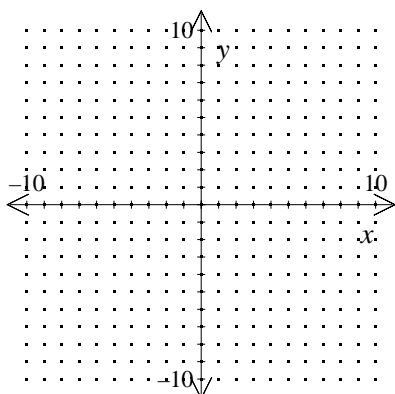
[6] \_\_\_\_\_

7. The cost of seeding a lawn is directly proportional to the area to be seeded. The cost of seeding an area 10 feet by 8 feet is \$8.00. How much does it cost to seed an area that measures 60 feet by 10 feet?

[7] \_\_\_\_\_

NAME: \_\_\_\_\_

8. Graph rectangle  $ABCD$  and find its area.  
 $A(-9, 3)$ ,  $B(-9, -4)$ ,  $C(-5, -4)$ ,  $D(-5, 3)$



[8] \_\_\_\_\_

9. A city regulates advertising signs. They *cannot* exceed  $36 \text{ ft}^2$  and *cannot* be more than 6 ft high. Draw and label the dimensions for three possible signs.

[9] \_\_\_\_\_

10. Mr. Alan's family room is a rectangle that measures 7 meters by 5 meters. In the room is a fireplace that extends out from the wall 0.5 meter and measures 1 meter across. Mr. Alan wants to cover the floor with carpet that costs \$12 per square meter. How much will the carpet cost?

[10] \_\_\_\_\_

11. Thom's living room is 10 ft by 12 ft by 8 ft high. He plans to paint one of the long walls as follows: a yellow square 7 ft by 7 ft in one corner and an overlapping blue square 6 ft by 6 ft in the opposite corner. What percent of the wall will be painted either blue or yellow? What percent will be painted with both colors?

[11] \_\_\_\_\_

12. The area of a rectangle is decreased by 25%. Which of the following could happen?

- [A] Both sides are decreased by 50%.  
[B] One side is decreased by 50%.  
[C] Both sides are decreased by 25%.  
[D] One side is decreased by 25%.  
[E] none of the above

[12] \_\_\_\_\_

13. If a rectangle's length is increased by 70% and its width is decreased by 55%, then what is the percent change in area?

[13] \_\_\_\_\_

[1] A

[2] B

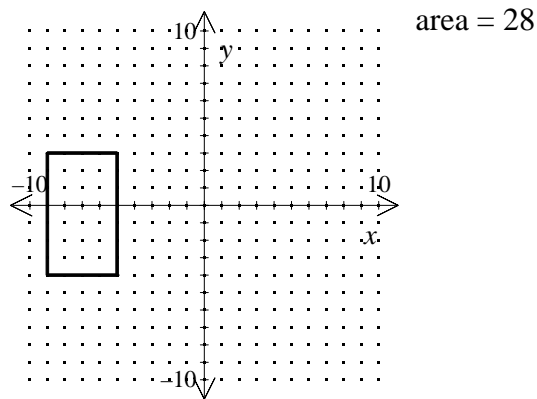
[3] B

[4]  $1 \text{ ft}^2 \ 32 \text{ in.}^2$

[5] D

[6] 12 cm

[7] \$60.00



[8] \_\_\_\_\_

Answers may vary. Sample: 4 ft high and 9 ft long, 6 ft high and 6 ft long, or 3 ft high and

[9] 12 ft long

[10] \$414

83.3% painted blue or yellow; 5.2% painted

[11] both colors

[12] D

[13]  $23\frac{1}{2}\%$  decrease