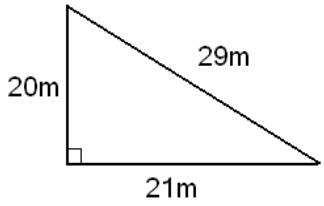
Algebra 1 Problem Set 14 Answers

1. Is 701 a prime number? yes

2. Consider the right triangle shown on the picture below.

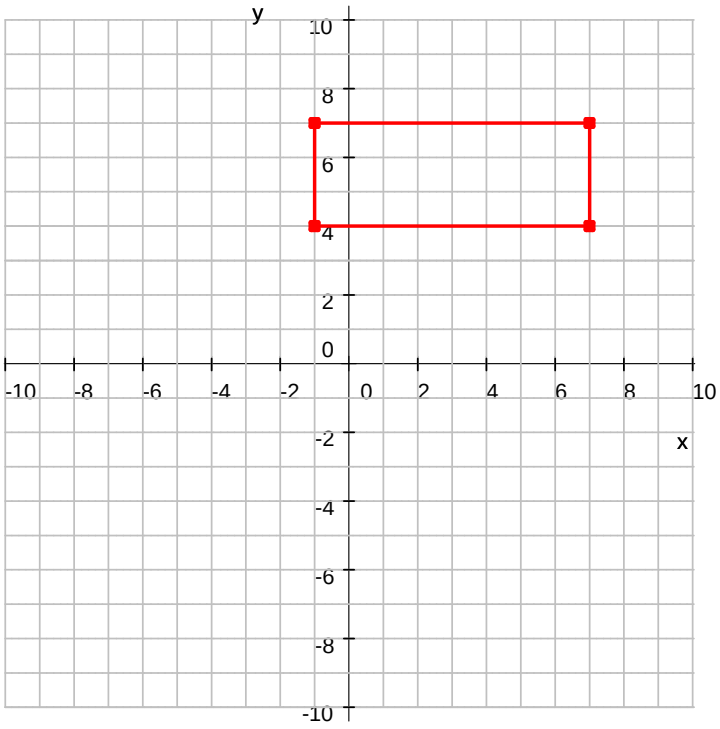


   (a) Find the perimeter of the triangle. $P = 70$ m

   (b) Find the area of the triangle. $A = 210$ m^2

3. The points $A(-1, 4)$, $B(-1, 7)$, $C(7, 7)$ and $D(7, 4)$ determine a rectangle.

   (a) Plot these points on a coordinate system. Draw the rectangle.



   (b) Find the perimeter of the rectangle. $P = 22$ units

   (c) Find the area of the rectangle. $A = 24$ units^2

4. Consider the numbers 280 and 216.

   (a) Find the least common multiple of the numbers. 7560

   (b) Find the greatest common factor of the numbers. 8

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5. Simplify each of the following expressions. Show all steps.

   (a) $\left|(-3)^3+4\,(5)\right|-|(-2)\,(-5)-12|-(-5)\left|(-1)^4-3\right|=$ 15

   (b) $\dfrac{-3\,(-2-3-4)}{-\,(-3+2)}+\dfrac{17-3^3}{14-4^2}=$ 32

6. Evaluate the expression $-16t^2+5t+4$ if

   (a) $t=0$ 4

   (b) $t=1$ -7

   (c) $t=2$ -50

7. Solve each of the following equations. Make sure to check your solutions.

   (a) $2x+7=3\,(x-4)$ 19

   (b) $\dfrac{5x+1}{4}=-1$ -1

   (c) $\dfrac{x}{7}-1=10$ 77

8. The difference between two numbers is 31, their sum is 23. Find these numbers. -4 and 27.

9. One side of a rectangle is 7 in shorter than twice the other side. Find the length of the sides if the perimeter of the rectangle is 52 in. 11 in and 15 in

10. The age of a father is 5 more than three times his son's age. The sum of their ages is 49. How old are they? 11 and 38

11. The distance between town A and town B is 200 miles. A car travels from A to B in four hours. Find the average velocity of the car. 50 $\dfrac{\text{mi}}{\text{h}}$

12. How far do we get if we travel 2 hours with an average velocity of 45 $\dfrac{\text{mi}}{\text{h}}$ (miles per hour), and then travel additional 3 hours with an average velocity of 55 $\dfrac{\text{mi}}{\text{h}}$. (miles per hour)? 255 mi

13. How long does it take to travel 1200 miles with an average velocity of 48 $\dfrac{\text{mi}}{\text{h}}$? 25 h