Algebra 1 — Problem Set 7 — Answers

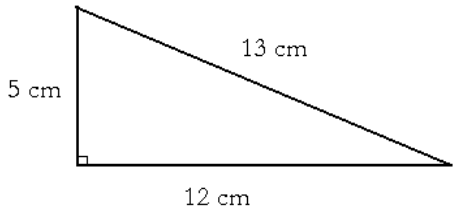
1. Round 20 172 004 038 to the nearest million. 20 172 000 030

2. The sides of a rectangle with sides 4 in and 11 in.

   (a) Find the perimeter of the rectangle. $P = 30$ in

   (b) Find the area of a rectangle. $A = 44$ in^2

3. The picture below shows a right triangle.



   (a) Find the perimeter of the triangle. $P = 30$ cm

   (b) Find the area of the triangle. $A = 30$ cm^2

4. Consider the following numbers: 4181, 9800, 1296, 420, 55 050

   (a) Find all numbers from the list that are divisible by 3. 1296, 420, 55 050

   (b) Find all numbers from the list that are divisible by 10. 9800, 420, 55 050

   (c) Find all numbers from the list that are divisible by 6. 1296, 420, 55 050

5. List all factors of 210. 1, 2, 3, 5, 6, 7, 10, 14, 15, 21, 30, 42, 70, 105, 210

6. List the prime numbers between 30 and 45. 31, 37, 41, 43

7. Find the average of $-2, 0, -12, 31, 48, -91$, and -2. -4

8. Perform the following operations. Show all steps.

   (a) $\dfrac{(-2)^2 - 3^3 - (-4)^2 - |-2-3|}{2-(2^3-2)} =$ 11

   (b) $-|2(-3) - 7|-2|| - 5 - (-3) + (-60) \div 3 \cdot (-2) =$ 18

   (c) $\dfrac{-4((-5+2) - 3(-2-1))}{(3+3^2) \div 2^2 - (-1)^2} =$ -12

   (d) $-2 - (-2)^2 - (-2)^3 - (-2)^4 - (-2)^5 =$ 18

   (e) $\dfrac{-2\left(-5\left(-3+2^2\right) - (3-(-4))\right)}{3^3 - 2 \cdot 7 - 1} =$ 2

9. Evaluate each of the following expressions if $x = -2$ and $y = 3$.

   (a) $x^4 - 3x^3 + 2x^2 + 5x - 7 =$ 31

   (b) $\dfrac{x^2 - 3xy}{3xy - x^2} =$ -1

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(c) $(y-2)(x+5)-2x = \quad 7$

(d) $x^3+x^2-(x+1)^2 = \quad -5$

(e) $\left|\left|x+x^2+x^3\right|-y^2\right|+x^y = \quad -5$