

1. Consider the number 219 506 781

(a) Write it in expanded form.

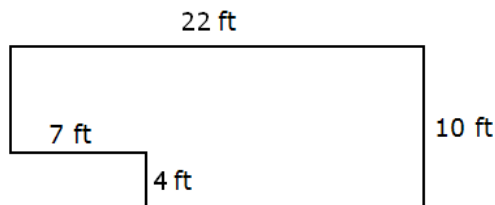
$$2 \cdot 100\,000\,000 + 1 \cdot 10\,000\,000 + 9 \cdot 1\,000\,000 + 5 \cdot 100\,000 + 6 \cdot 10\,000 + 7 \cdot 1\,000 + 8 \cdot 100 + 1 \cdot 10 + 1 \cdot 1$$

(b) Use words to write it. **two hundred nineteen million, five hundred six thousand, seven hundred eighty-one**

(c) Round it to the nearest ten thousand. **219 510 000**

(d) Round it to the nearest million. **220 000 000**

2. Consider the figure shown on the picture below.



(a) Find the perimeter of the figure. Include units in your answer. **$P = 64$ ft**

(b) Find the perimeter and area of the rectangle. Include units in your answer. **$A = 192$ ft²**

3. Consider the numbers: 512, 2700, 6204, 2406, 6402.

(a) Find all numbers from the list that are divisible by 3. **512, 2700, 6204, 2406, 6402**

(b) Find all numbers from the list that are divisible by 4. **512, 2700, 6204**

(c) Find all numbers from the list that are divisible by 12. **512, 2700, 6204**

4. List all factors of 144. **1, 2, 3, 4, 6, 8, 9, 12, 16, 18, 24, 36, 48, 72, 144**

5. Find the least common multiple of 70 and 120. **840**

6. Find the average of 4, -1 , 0 , -8 , 0 , and -7 . **-2**

7. Perform the indicated operations. Show all steps.

$$(a) \frac{-5(-3+7)(-2)(-2^2+3)}{-3(5+(-3))-(-2)((-2)^2-11)} = 2$$

$$(b) \frac{(-2)^3 - (-1) - ((-2)^2 + 1)}{5 - 3 + 1} = -4$$

$$(c) 4 - 2(3 - (-1)^2) - (2 - 5) - 10 - 2(-3) = -1$$

$$(d) |12 - 3|2 - 7|| = 3$$

$$(e) |12 - 3||2 - 7| = 45$$

$$(f) 12|-3||2 - 7|| = 180$$

$$(g) ||12 - 3||2 - 7| = 11$$

$$(h) 24 \div 6 \cdot 2 = 8$$

$$(i) (-1)^2 + (-1)^3 + (-1)^4 + (-1)^5 + (-1)^6 = 1$$

8. Evaluate each of the following expressions if $a = -3$ and $b = -5$.

$$(a) -a + (-a + b)^2 = 7$$

$$(b) a^2 - 2ab + b^2 = 4$$

$$(c) 2a - 3b - |2b - 1| = -2$$

$$(d) 2a^2 + 7a - 5 = -8$$

9. Solve each of the following equations. Make sure to check your solution.

$$(a) 41d = -820 \quad -20$$

$$(b) b + 14 = -3 \quad -17$$

$$(c) \frac{y}{10} = -3 \quad -30$$

$$(d) m - (-6) = 3 \quad -3$$