

- List all factors of 60.
- Which of the following numbers is a prime number?
39, 91, 71, 45, 81, 201
- Find the prime factorization of 780.
- Find the greatest common divisor and least common multiple of 75 and 420.
- Label each of the following statements as true or false.

a) 3 is a multiple of 3.	e) 14 is a multiple of 4 and 7 is a prime number
b) $4 < 4$	f) Every rectangle is a square.
c) $5 \geq 5$	g) Every square is a rectangle.
d) 14 is a multiple of 4 or 7 is a prime number	
- Perform the operations as indicated. Show all steps.

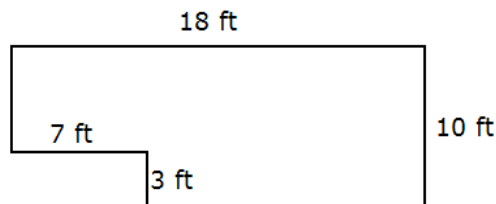
a) $(-2)^2$	d) $-2(-5)$	g) $20 - 3(-8)$
b) -2^2	e) $-2 - (-5)$	h) $\frac{(-2)^3 - 5(-3) - (-1)^4 + (-3)^2}{-2^2 - (-1)}$
c) $-2 - 5$	f) $-2(-(-5))$	i) $-3^2 - (-24) \div (5 - (-1)^3) \cdot 2$
- Simplify each of the following expressions by applying the order of operations agreement. **Show all steps. Perform only one operation in each step.**

a) $7 \cdot 3^2 - (3 - 2^2 \cdot 5 - 1) \div 2$	g) $\frac{4^2 + 5^2 - 6 \div 2 \cdot 3}{4^2 - 8 \cdot 2}$	m) $ -10 - 7 - 1 - 4 $
b) $\frac{5 - 1 + 2}{-1^2 + (-1)^2}$	h) $3 + 2(5 + 3(15 - 2^3) - 2^2 - 1)$	n) $ -10 - 7 - 1 - 4 $
c) $\sqrt{169 - 144}$	i) $4(3(2(2^2 - 1) - 1) - 1) + 5$	o) $ -10 - 7 1 - 4 $
d) $\sqrt{169} - \sqrt{144}$	j) $\sqrt{\sqrt{36} + 5\sqrt{9} - \sqrt{25}}$	p) $ -10 - 7 - 1 - 4 $
e) $2^3 - 2(5 - (-3)^2)^2$	k) $-2^2 - 3(5 - (-2)^2) - (-1)^3$	q) $ -10 -7 - 1 - 4 $
f) $\left(\left((8 - 5)^2 - 7\right)^2 - 2\right)^2 - 1$	l) $-2 - 5(-3^2 - 2(-7))$	r) $\sqrt{4\sqrt{64} - \sqrt{49}}$
- Let $p = 4$, $q = -3$, and $s = 1$. Evaluate each of the following expressions.

a) $\frac{p - q - s}{p + q + s}$	b) $\frac{2p - q}{p - (s - q)}$	c) $p^2 - 2s^2$	d) $p^2 - (2s)^2$	e) $2pq^2$
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- Suppose that $x = 4$ and $y = -3$. Evaluate each of the algebraic expressions.

a) $2x - y + 1$	b) $-y^2 - 3x^2y$	c) $\sqrt{x^2 + y^2}$	d) $5x - 2y + 2x + y$	e) $\left \frac{x^2 - y^2}{y^2 - x^2}\right $
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- Consider a rectangle with sides 18 cm and 40 cm long.
 - Compute the perimeter of the rectangle in centimeters. Include units in your computation and answer.
 - Compute the area of the rectangle in square centimeters. Include units in your computation and answer.

11. Consider the object shown on the picture.
- Compute the perimeter of the object in feet. Include units in your computation and answer.
 - Compute the area of the object in square feet. Include units in your computation and answer.



12. Consider the equation $x^3 - x^2 + 7 = x^2 + 5x + 1$. Which of the given numbers are solutions of the equation? The given numbers: 0, 1, -1, 2, and -2
13. Consider the inequality $x^2 + 3x \leq x + 24$. Which of the given numbers are solutions of the inequality? The given numbers: 5, 6, 0, -10, 3, and 4
- 14*. (Enrichment) Place one or more pairs of parentheses into the expression on the left-hand side to make the equation true.

$$2 - 3 \cdot 5 - 2^2 - 4 \cdot 2 + 3 = 29$$

Answers

- 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60
- 71
- $780 = 2^2 \cdot 3 \cdot 5 \cdot 13$
- $\gcd(75, 420) = 15$ and $\text{lcm}(75, 420) = 2100$
- a) true b) false c) true d) true e) false f) false g) true
- a) 4 b) -4 c) -7 d) 10 e) 3 f) -10 g) 44 h) -5 i) -1
- a) 72 b) undefined c) 5 d) 1 e) -24 f) 3 g) undefined h) 45 i) 61 j) 4
k) -6 l) -27 m) 14 n) 20 o) 31 p) 12 q) 120 r) 5
- a) 3 b) undefined c) 14 d) 12 e) 72
- a) 12 b) 135 c) 5 d) 31 e) 1
- a) $P = 116 \text{ cm}$ b) $P = 720 \text{ cm}^2$
- a) $P = 56 \text{ ft}$ b) $A = 159 \text{ ft}^2$
- 2 and 1
- 0, 3, and 4
- 14*. Think about it some more.....