

1. Find the greatest common factor and least common multiple of the following pairs of numbers.

(a) 150 and 510.

(b) 810 and 96.

2. List all factors of 54.

3. Simplify each of the following expressions.

(a) $\frac{(-2)^2 (10 - 6^2 \div (-2)^2)}{|-2 - 2^2| - 2} =$

(b) $(-6)^2 \div (-6) - |-3^2 + 5| - \frac{(-2 - 3(-4))}{-5} =$

(c) $\frac{4(-3 + 2) - |2 - 3^2 + 1|}{3 - 2^2} =$

4. Evaluate $\frac{2x + 16x^2 - 5}{2x - 1}$ ($= 8x + 5$) if

(a) $x = -2$

(b) $x = 2$

(c) $x = 0$

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

(a) $4x - 7 = 10x + 5$

(b) $\frac{3x + 1}{2} = -7$

(c) $2x - 5 = 13 - x$

6. One side of a rectangle is 7 in longer than three times the other side. The perimeter of the rectangle is 38 in. Find the sides.

7. The sum of two numbers is 17. Their difference is 89. Find the numbers.

8. Sarah is 3 years younger than her brother. Find his age if the sum of their ages is 17.

9. Three consecutive numbers add up to -42 . Find these numbers.

10. Find the perimeter and area of the rectangle determined by the points $A(-2, -5)$, $B(3, -5)$, $C(-2, 1)$, and $D(3, 1)$.