Adding Positive and Negative Numbers

Find each sum.

1) \((-7) + 9 = \boxed{2}\)

2) \((-8) + (-1)\)

Add the numbers and keep sign of largest number.

3) \((-1) + 5\)

4) \((-6) + 12\)

5) \((-8) + (-5)\)

6) \(11 + (-2)\)

7) \(49 + (-15)\)

8) \((-47) + 30\)

9) \(49 + (-27)\)

10) \((-29) + 9\)

11) \(43 + (-1)\)

12) \(10 + (-2) + 1\)

13) \((-2) + 11 + 4\)

14) \(12 + 7 + (-4)\)

15) \((-7) + 3 + 9\)

16) \((-1) + 11 + 5\)
Combining Like Terms

Simplify each expression.

1) \(-6k + 7k\)

2) \(12r - 8 - 12\)

3) \(m - 10 + 9m = 10n - 13\)

4) \(-4x - 10x\)

5) \(-r - 10r\)

6) \(-2x + 11 + 6x\)

7) \(11r - 12r\)

8) \(-v + 12v\)

9) \(-8x - 11x\)

10) \(4p + 2p\)

11) \(5n + 11n\)

12) \(n + 4 - 9 - 5n\)

13) \(12r + 5 + 3r - 5\)

14) \(-5 + 9n + 6\)
Infinite Algebra 1

One-Step Equations

Solve each equation.

1) \( 26 = \frac{8}{v} \)
   \[-8 \quad \frac{78}{8} \quad 18 = v \]
   \( \text{Get variable by itself} \)

2) \( 3 + p = 8 \)

3) \( 15 + b = 23 \)
   \( \text{Add or Subtract numbers to move to one side opposite letter/variable} \)

4) \( -15 + n = -9 \)

5) \( m + 4 = -12 \)

6) \( x - 7 = 13 \)

7) \( m - 9 = -13 \)

8) \( p - 6 = -5 \)

9) \( v - 15 = -27 \)

10) \( n + 16 = 9 \)

11) \( -104 = 8x \)

12) \( 14b = -56 \)

13) \( -6 = \frac{b}{18} \)

14) \( 10n = 40 \)
Two-Step Equations

Solve each equation.

1) \( \frac{a}{4} + 2x = -2 \)
   \[ x = \frac{a}{4} - 2 \]

2) \( -6 + \frac{x}{4} = -5 \)
   \[ \frac{x}{4} = 1 \]
   \[ x = 4 \]

3) \( 9x - 7 = -7 \)
   \[ 9x = 0 \]
   \[ x = 0 \]

4) \( 0 = 4 + \frac{n}{5} \)
   \[ \frac{n}{5} = -4 \]
   \[ n = -20 \]

5) \( -4 = \frac{r}{20} - 5 \)
   \[ \frac{r}{20} = 1 \]
   \[ r = 20 \]

6) \( -1 = \frac{5 + x}{6} \)
   \[ 5 + x = -6 \]
   \[ x = -11 \]

7) \( \frac{v + 9}{3} = 8 \)
   \[ v + 9 = 24 \]
   \[ v = 15 \]

8) \( 2(n + 5) = -2 \)
   \[ n + 5 = -1 \]
   \[ n = -6 \]

9) \( -9x + 1 = -80 \)
   \[ -9x = -81 \]
   \[ x = 9 \]

10) \( -6 = \frac{n}{2} - 10 \)
    \[ \frac{n}{2} = 4 \]
    \[ n = 8 \]

11) \( -2 = 2 + \frac{v}{4} \)
    \[ \frac{v}{4} = -4 \]
    \[ v = -16 \]

12) \( 144 = -12(x + 5) \)
    \[ x + 5 = -12 \]
    \[ x = -17 \]
Multi-Step Equations

Solve each equation.

1) \[ -20 - \frac{2x - 6x}{-10} = -20 \]
   \[ x = 2 \]

2) \[ 6 = 1 - 2n + 5 \]

3) \[ 8x - 2 = -9 + 7x \]

4) \[ a + 5 = -5a + 5 \]

5) \[ 4m - 4 = 4m \]

6) \[ p - 1 = 5p + 3p - 8 \]

7) \[ 5p - 14 = 8p + 4 \]

8) \[ p - 4 = -9 + p \]

9) \[ -8 = -(x + 4) \]

10) \[ 12 = -4(-6x - 3) \]

11) \[ 14 = -(p - 8) \]

12) \[ -(7 - 4x) = 9 \]

13) \[ -18 - 6k = 6(1 + 3k) \]

14) \[ 5n + 34 = -2(1 - 7n) \]

15) \[ 2(4x - 3) - 8 = 4 + 2x \]

16) \[ 3n - 5 = -8(6 + 5n) \]

17) \[ -(1 + 7x) - 6(-7 - x) = 36 \]

18) \[ -3(4x + 3) + 4(6x + 1) = 43 \]

19) \[ 24a - 22 = -4(1 - 6a) \]

20) \[ -5(1 - 5x) + 5(-8x - 2) = -4x - 8x \]
Simplify each expression.

1) \(-6(a + 8)\)

\(-6a - 48\)

2) \(4(1 + 9x)\)

\(4 + 36x\)

\(5 + 36x\)

3) \(6(-5n + 7)\)

\(-30n + 42\)

4) \((9m + 10) \cdot 2\)

\(18m + 20\)

5) \((-4 - 3n) \cdot -8\)

\(32 + 24n\)

6) \(8(-b - 4)\)

\(-8b - 32\)

7) \((1 - 7n) \cdot 5\)

\(-35n + 5\)

8) \(-6(x + 4)\)

\(-6x - 24\)

9) \(5(3m - 6)\)

\(15m - 30\)

10) \((-6p + 7) \cdot -4\)

\(24p - 28\)

11) \(5(b - 1)\)

\(5b - 5\)

12) \((x + 9) \cdot 5\)

\(5x + 45\)
Finding Slope From a Graph

Find the slope of each line.

1) [Graph showing a line with slope labeled as 1/2]

2) [Graph showing a line with slope labeled as m]

3) [Graph showing a line]

4) [Graph showing a line]

5) [Graph showing a line]

6) [Graph showing a line]

7) [Graph showing a line]

8) [Graph showing a line]
Finding Slope From Two Points

Find the slope of the line through each pair of points.

1) \((19, -16), (-7, -15)\)
\[ m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-15 - (-16)}{-7 - 19} = \frac{1}{-26} \]

2) \((1, -19), (-2, -7)\)

3) \((-4, 7), (-6, -4)\)

4) \((20, 8), (9, 16)\)

5) \((17, -13), (17, 8)\)

6) \((19, 3), (20, 3)\)

7) \((3, 0), (-11, -15)\)

8) \((19, -2), (-11, 10)\)
Evaluating Expressions

Evaluate each using the values given.

1) \((y + 2 + x)\) use \(x = 1\), and \(y = 2\)
   \[2 + 2 + 1 = 5\]

2) \(a - 5 - b\); use \(a = 10\), and \(b = 4\)

3) \(p^2 + m\); use \(m = 1\), and \(p = 5\)

4) \(y + 9 - x\); use \(x = 1\), and \(y = 3\)

5) \(m + p + 5\); use \(m = 1\), and \(p = 5\)

6) \(y^2 - x\); use \(x = 7\), and \(y = 7\)

7) \(z(x + y)\); use \(x = 6\), \(y = 8\), and \(z = 6\)

8) \(x + y + y\); use \(x = 9\), and \(y = 10\)

9) \(p^3 + 10 + m\); use \(m = 9\), and \(p = 3\)

10) \(6q + m - m\); use \(m = 8\), and \(q = 3\)

11) \(x^3 - 4\); use \(m = 4\), and \(p = 5\)

12) \(x - (1 + y)\); use \(y = 10\), and \(x = 2\)

13) \(z + 3 = 0\); use \(y = 3\), and \(z = 7\)

14) \((b + x)\); use \(x = 1\), and \(y = 1\)
Work Word Problems

Solve each question. Round your answer to the nearest hundredth.

1) Working alone, Ryan can dig a 10 ft by 10 ft hole in five hours. Castel can dig the same hole in six hours. How long would it take them if they worked together?

2) Shawna can pour a large concrete driveway in six hours. Dan can pour the same driveway in seven hours. Find how long it would take them if they worked together.

3) It takes Trevon ten hours to clean an attic. Cody can clean the same attic in seven hours. Find how long it would take them if they worked together.

4) Working alone, Carlos can oil the lanes in a bowling alley in five hours. Jenny can oil the same lanes in nine hours. If they worked together how long would it take them?

5) Working together, Paul and Daniel can pick forty bushels of apples in 4.95 hours. Had he done it alone it would have taken Daniel 9 hours. Find how long it would take Paul to do it alone.

6) Working together, Jenny and Natalie can mop a warehouse in 5.14 hours. Had she done it alone it would have taken Natalie 12 hours. How long would it take Jenny to do it alone?