

### 6-3 Elimination Using Addition and Subtraction

Look @ Coefficients..... Same = Subtract      Opposite = Add  
 Keep variables lined up and both on the same side

Use elimination to solve each system of equations.

1.  $x + y = -4$   
 $x - y = 2$

$(-1, -3)$

2.  $2x - 3y = 14$   
 $x + 3y = -11$

$(1, -4)$

3.  $3x - y = -9$   
 $-3x - 2y = 0$

$(-2, 3)$

4.  $2a - 3b = -13$   
 $2a + 2b = 7$

$(-\frac{1}{2}, 4)$

5.  $4x + 2y = 6$   
 $4x + 4y = 10$

$(\frac{1}{2}, 2)$

6.  $5x - y = 6$   
 $5x + 2y = 3$

$(1, -1)$

13. Rema is older than Ken. The difference of their ages is 12 and the sum of their ages is 50. Find the age of each.

Rema = 31  
 Ken = 19

$R - K = 12$   
 $R + K = 50$

**Exercises**

Use elimination to solve each system of equations.

1.  $6x + 5y = 4$   
 $6x - 7y = -20$

$(-1, 2)$

2.  $3m - 4n = -14$   
 $3m + 2n = -2$

$(-2, 2)$

3.  $3a + b = 1$   
 $a + b = 3$

$(-1, 4)$

4.  $-3x - 4y = -23$   
 $-3x + y = 2$

$(1, 5)$

5.  $x - 3y = 11$   
 $2x - 3y = 16$

$(5, -2)$

6.  $x - 2y = 6$   
 $x + y = 3$

$(4, -1)$

7.  $2x + 2y = -2$   
 $3x - 2y = 12$

$(2, -3)$

8.  $4x - 2y = -1$   
 $-4x + 4y = -2$

$(-1, -\frac{3}{2})$

9.  $x - y = 2$   
 $x + y = -3$

$(-\frac{1}{2}, -\frac{5}{2})$

13. The sum of two numbers is 70. One number is ten more than twice the other number. Find the numbers.

$$\begin{aligned}x + y &= 70 \\ x &= 2y + 10\end{aligned}$$
 $(20, 50)$