

## Assignment

**Find the component form of the resultant vector.**

1)  $\vec{u} = \langle 20, -21 \rangle$   
Find:  $-3\vec{u}$

2) Given:  $P = (0, -4)$   $Q = (-1, 9)$   
Find:  $8\vec{PQ}$

3)  $\vec{u} = \langle 3, 3 \rangle$   
 $\vec{v} = \langle 11, 8 \rangle$   
Find:  $\vec{u} + \vec{v}$

4) Given:  $P = (-7, -6)$   $Q = (6, 10)$   
 $R = (-3, -9)$   $S = (-3, 7)$   
Find:  $\vec{PQ} + \vec{RS}$

5)  $\vec{f} = \langle 12, 2 \rangle$   
 $\vec{v} = \langle 2, 4 \rangle$   
Find:  $4\vec{f} - 6\vec{v}$

6) Given:  $T = (-3, 8)$   $X = (3, 10)$   
 $Y = (-4, -7)$   $Z = (-8, -10)$   
Find:  $4\vec{TX} + \vec{YZ}$

7) Given:  $A = (4, 0)$   $B = (-6, 10)$   
Unit vector in the direction of  $\vec{AB}$

8) Given:  $P = (-10, -8)$   $Q = (-4, -3)$   
Find the vector opposite  $\vec{PQ}$

**Find the magnitude and direction angle of the resultant vector.**

9)  $\vec{a} = \langle 6, -10 \rangle$   
 $\vec{g} = \langle -3, 11 \rangle$   
Find:  $\vec{a} + \vec{g}$

10) Given:  $T = (10, -4)$   $X = (0, -1)$   
 $Y = (0, -6)$   $Z = (-1, 5)$   
Find:  $-\vec{TX} - \vec{YZ}$

11)  $\vec{u} = \langle 12, 16 \rangle$   
Find:  $-5\vec{u}$

12) Given:  $P = (-4, 3)$   $Q = (6, -9)$   
Find:  $9\vec{PQ}$

13)  $\vec{a} = \langle -3, -12 \rangle$   
 $\vec{b} = \langle 4, 9 \rangle$   
Find:  $-3\vec{a} - 7\vec{b}$

14) Given:  $A = (10, 0)$   $B = (3, -1)$   
 $C = (-5, 7)$   $D = (-2, 9)$   
Find:  $-3\vec{AB} + 2\vec{CD}$

**Draw a vector diagram to find the resultant of each pair of vectors using the triangle method. Then state the magnitude and direction angle of the resultant.**

15)  $\vec{m} = \langle -7, 1 \rangle$   $\vec{n} = \langle 12, -16 \rangle$

## Assignment

**Find the component form of the resultant vector.**

1)  $\vec{u} = \langle 20, -21 \rangle$

Find:  $-3\vec{u}$

$\langle -60, 63 \rangle$

2) Given:  $P = (0, -4)$   $Q = (-1, 9)$

Find:  $8\vec{PQ}$

$\langle -8, 104 \rangle$

3)  $\vec{u} = \langle 3, 3 \rangle$

$\vec{v} = \langle 11, 8 \rangle$

Find:  $\vec{u} + \vec{v}$

$\langle 14, 11 \rangle$

4) Given:  $P = (-7, -6)$   $Q = (6, 10)$

$R = (-3, -9)$   $S = (-3, 7)$

Find:  $\vec{PQ} + \vec{RS}$

$\langle 13, 32 \rangle$

5)  $\vec{f} = \langle 12, 2 \rangle$

$\vec{v} = \langle 2, 4 \rangle$

Find:  $4\vec{f} - 6\vec{v}$

$\langle 36, -16 \rangle$

6) Given:  $T = (-3, 8)$   $X = (3, 10)$

$Y = (-4, -7)$   $Z = (-8, -10)$

Find:  $4\vec{TX} + \vec{YZ}$

$\langle 20, 5 \rangle$

7) Given:  $A = (4, 0)$   $B = (-6, 10)$

Unit vector in the direction of  $\vec{AB}$ 

$\left\langle -\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2} \right\rangle$

8) Given:  $P = (-10, -8)$   $Q = (-4, -3)$

Find the vector opposite  $\vec{PQ}$ 

$\langle -6, -5 \rangle$

**Find the magnitude and direction angle of the resultant vector.**

9)  $\vec{a} = \langle 6, -10 \rangle$   
 $\vec{g} = \langle -3, 11 \rangle$   
Find:  $\vec{a} + \vec{g}$

$\sqrt{10} \approx 3.162; 18.43^\circ$

10) Given:  $T = (10, -4)$   $X = (0, -1)$   
 $Y = (0, -6)$   $Z = (-1, 5)$   
Find:  $-\vec{TX} - \vec{YZ}$

$\sqrt{317} \approx 17.804; 308.16^\circ$

11)  $\vec{u} = \langle 12, 16 \rangle$   
Find:  $-5\vec{u}$

$100; 233.13^\circ$

12) Given:  $P = (-4, 3)$   $Q = (6, -9)$   
Find:  $9\vec{PQ}$

$18\sqrt{61} \approx 140.584; 309.81^\circ$

13)  $\vec{a} = \langle -3, -12 \rangle$   
 $\vec{b} = \langle 4, 9 \rangle$   
Find:  $-3\vec{a} - 7\vec{b}$

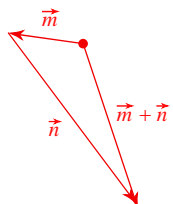
$\sqrt{1090} \approx 33.015; 234.87^\circ$

14) Given:  $A = (10, 0)$   $B = (3, -1)$   
 $C = (-5, 7)$   $D = (-2, 9)$   
Find:  $-3\vec{AB} + 2\vec{CD}$

$\sqrt{778} \approx 27.893; 14.53^\circ$

**Draw a vector diagram to find the resultant of each pair of vectors using the triangle method. Then state the magnitude and direction angle of the resultant.**

15)  $\vec{m} = \langle -7, 1 \rangle$   $\vec{n} = \langle 12, -16 \rangle$



$15.81; 288.43^\circ$