

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

Date _____ Period _____

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: $-3\vec{a} - 7\vec{b}$

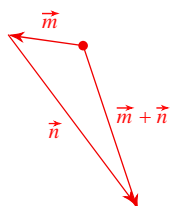
$\sqrt{1090} \approx 33.015; 234.87^\circ$

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



$15.81; 288.43^\circ$