

# More Vector Practice!

2020

Name \_\_\_\_\_

For each of the following vectors, find ...

... component form, sum of unit vectors form, sketch in standard position, magnitude, and direction.

1. Point S is at  $(-3, -2)$  and T is at  $(5, -7)$ . Find  $\overrightarrow{ST}$ .

a. component form	c. sketch in standard position	d. magnitude (nearest hundredth)	e. direction (nearest hundredth)
b. sum of unit vectors			

2. Point F is at  $(-5, 2)$  and G is at  $(-8, 15)$ . Find  $\overrightarrow{FG}$ .

a. component form	c. sketch in standard position	d. magnitude (nearest hundredth)	e. direction (nearest hundredth)
b. sum of unit vectors			

3. Point J is at  $(6, -7)$  and K is at  $(-9, -11)$ . Find  $\overrightarrow{JK}$ .

a. component form	c. sketch in standard position	d. magnitude (nearest hundredth)	e. direction (nearest hundredth)
b. sum of unit vectors			

4. Point L is at  $(0, 6)$  and M is at  $(2, 2)$ . Find  $\overrightarrow{LM}$ .

a. component form	c. sketch in standard position	d. magnitude (nearest hundredth)	e. direction (nearest hundredth)
b. sum of unit vectors			

5. Point Q is at  $(1.9, -4.7)$  and R is at  $(6.8, -12.3)$ . Find  $\overrightarrow{QR}$ .

a. component form	c. sketch in standard position	d. magnitude (nearest hundredth)	e. direction (nearest hundredth)
b. sum of unit vectors			

Find: a)  $-\frac{1}{2}\vec{u} - 5\vec{v}$  and b)  $-3\vec{u} + 6\vec{v}$  for each of the following.

Write your answer in the form of the given vectors.

6.  $\vec{u} = \langle 4, -4 \rangle$  and  $\vec{v} = \langle 6, 9 \rangle$

7.  $\vec{u} = 2\vec{i} - 3\vec{j}$  and  $\vec{v} = -\vec{i} + 5\vec{j}$

For the following find the unit vector in the direction of the given vector.

Use simplified radicals, not decimals.

8.  $\vec{v} = \langle -3, 9 \rangle$

9.  $\vec{v} = \langle 8, 2 \rangle$

10.  $\vec{w} = \langle -5, 5 \rangle$

11.  $\vec{w} = 3\vec{i} + 3\vec{j}$

12.  $\vec{v} = -\frac{1}{2}\vec{i} + \frac{3}{2}\vec{j}$

13.  $\vec{w} = -7\vec{j}$

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1)  $\langle 8, -5 \rangle$ ; 9.43;  $327.99^\circ$

2)  $\langle -3, 13 \rangle$ ; 13.34;  $102.99^\circ$

3)  $\langle -15, -4 \rangle$ ; 15.52;  $194.93^\circ$

4)  $\langle 2, -4 \rangle$ ; 4.47;  $296.57^\circ$

5)  $\langle 4.9, -7.6 \rangle$ ; 9.04;  $302.81^\circ$

6)  $\langle -32, -43 \rangle$ ;  $\langle 24, 66 \rangle$

7)  $4\vec{i} - \frac{47}{2}\vec{j}$ ;  $-12\vec{i} + 39\vec{j}$

8)  $\left\langle \frac{-\sqrt{10}}{10}, \frac{3\sqrt{10}}{10} \right\rangle$

9)  $\left\langle \frac{4\sqrt{17}}{17}, \frac{\sqrt{17}}{17} \right\rangle$

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

11)  $\frac{\sqrt{2}}{2}\vec{i} + \frac{\sqrt{2}}{2}\vec{j}$

12)  $-\frac{\sqrt{10}}{10}\vec{i} + \frac{3\sqrt{10}}{10}\vec{j}$

13)  $-\vec{j}$