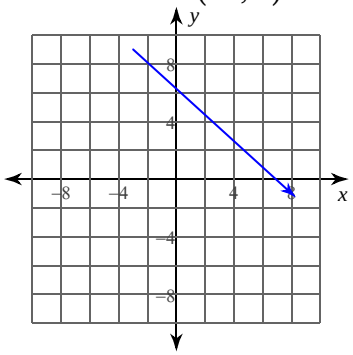
 Name_____

# Two-Dimensional Vector Basics

Date_____ Period____

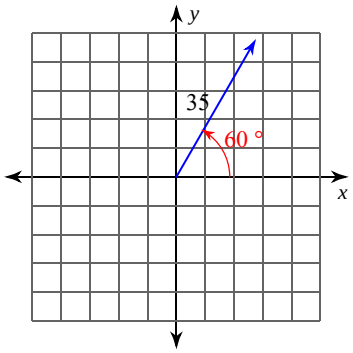
**Write each vector in component form.**

1) $\overrightarrow{RS}$ where $R = (-3, 9)$ $S = (8, -1)$




2) $\overrightarrow{PQ}$ where $P = (-10, 5)$ $Q = (-9, -10)$

3)




4) $|\vec{k}| = 52, 174°$

**Draw a diagram to illustrate the horizontal and vertical components of the vector. Then find the magnitude of each component.**

5) $|\vec{t}| = 26, 115°$

6) $|\vec{a}| = 15, 230°$

**Find the magnitude and direction angle for each vector.**

7) $8\vec{i} + 15\vec{j}$

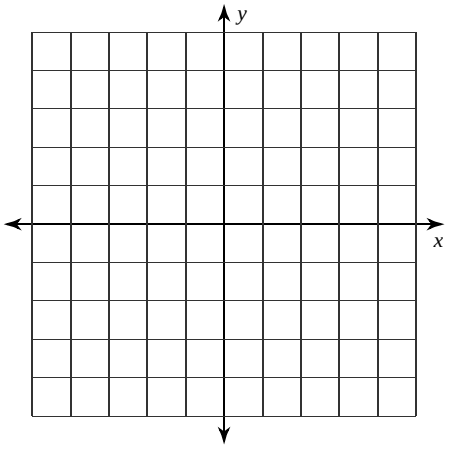
8) $\vec{r} = \langle -8, -41 \rangle$

**Find the component form, magnitude, and direction angle for the given vector**

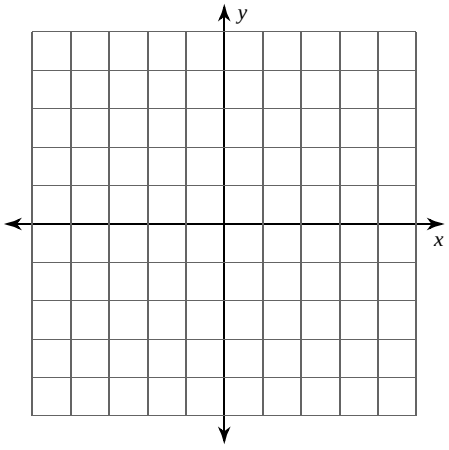
9) $\overrightarrow{CD}$ where $C = (6, -3)$ $D = (-6, -9)$

**Sketch a graph of each vector then find the magnitude and direction angle.**

10) $5\vec{i} - 12\vec{j}$




11) $\overrightarrow{RS}$ where $R = (-9, -1)$ $S = (-7, -3)$



**Critical thinking question:**

12) Find the component form of $\vec{v}$ with a magnitude of 50 in the opposite direction of $\vec{u} = \left\langle 2, -\frac{3}{2} \right\rangle$

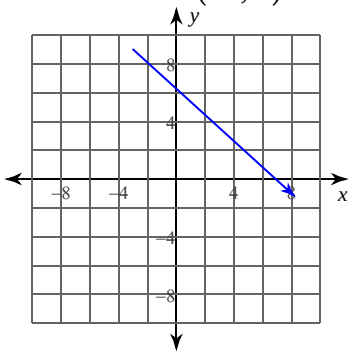
 Name_____

# Two-Dimensional Vector Basics

Date_____ Period____

**Write each vector in component form.**

1) $\overrightarrow{RS}$ where $R = (-3, 9)$ $S = (8, -1)$

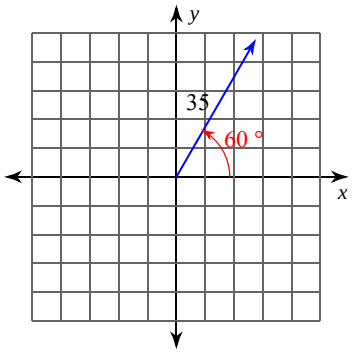



$\langle 11, -10 \rangle$

2) $\overrightarrow{PQ}$ where $P = (-10, 5)$ $Q = (-9, -10)$

$\langle 1, -15 \rangle$

3)



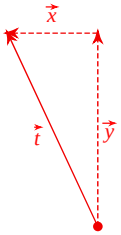

$\left\langle \frac{35}{2}, \frac{35\sqrt{3}}{2} \right\rangle$

4) $|\vec{k}| = 52, 174°$

$\langle -51.72, 5.44 \rangle$

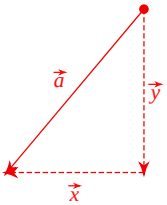
**Draw a diagram to illustrate the horizontal and vertical components of the vector. Then find the magnitude of each component.**

5) $|\vec{t}| = 26, 115°$




Horizontal: −10.99
Vertical: 23.56

6) $|\vec{a}| = 15, 230°$




Horizontal: −9.64
Vertical: −11.49

**Find the magnitude and direction angle for each vector.**

7) $8\vec{i} + 15\vec{j}$

17
61.93°

8) $\vec{r} = \langle -8, -41 \rangle$

$\sqrt{1745} \approx 41.773$
258.96°

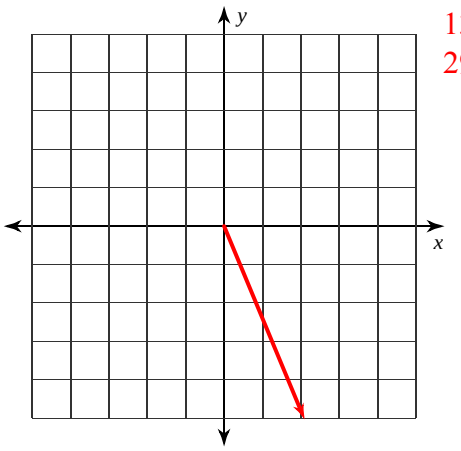
**Find the component form, magnitude, and direction angle for the given vector**

9) $\overrightarrow{CD}$ where $C = (6, -3)$ $D = (-6, -9)$

$\langle -12, -6 \rangle$
$6\sqrt{5} \approx 13.416$
206.57°

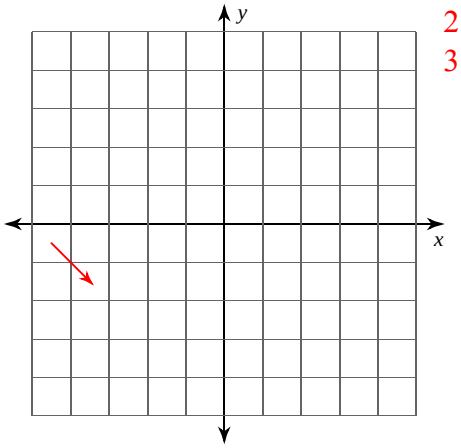
**Sketch a graph of each vector then find the magnitude and direction angle.**

10) $5\vec{i} - 12\vec{j}$




13
292.62°

11) $\overrightarrow{RS}$ where $R = (-9, -1)$ $S = (-7, -3)$




$2\sqrt{2} \approx 2.828$
315°

**Critical thinking question:**

12) Find the component form of $\vec{v}$ with a magnitude of 50 in the opposite direction of $\vec{u} = \left\langle 2, -\frac{3}{2} \right\rangle$

$\vec{v} = \langle -40, 30 \rangle$