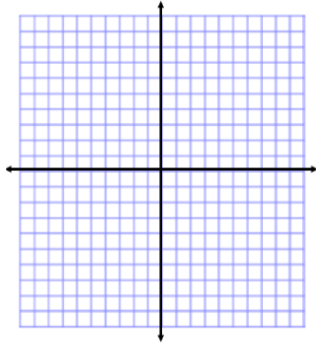


Name: _____

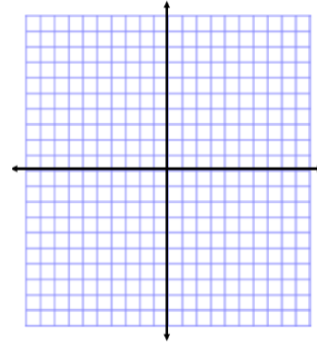
Vectors

Draw each vector:

1) $\langle 5, 3 \rangle$

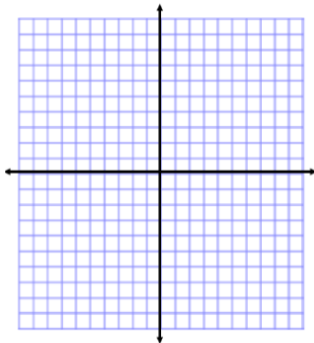


2.) $\langle -3, -5 \rangle$

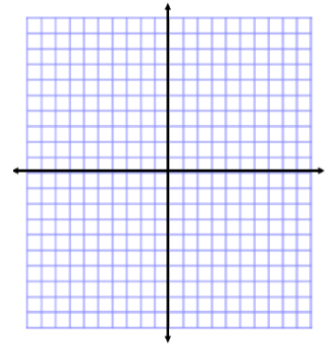


Draw the vector between the two points. Find the component form, then sketch it.

3.) $(2, 7)$ and $(1, 1)$



4.) $(-5, -4)$ and $(-2, 3)$



Determine if the following vectors or equivalent.

5.) $\overrightarrow{RS} = \overrightarrow{XY}$, given $R = (-3, 7)$, $S = (0, 4)$ and $X = (-2, 11)$, $Y = (1, 14)$

6.) $\overrightarrow{RS} = \overrightarrow{XY}$, given $R = (9, -5)$, $S = (-1, -1)$ and $X = (10, 0)$, $Y = (0, 4)$

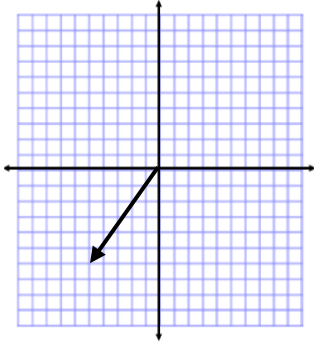
Find the direction (component form) and magnitude.

7.) $E = (10, -3)$, $F = (5, 2)$

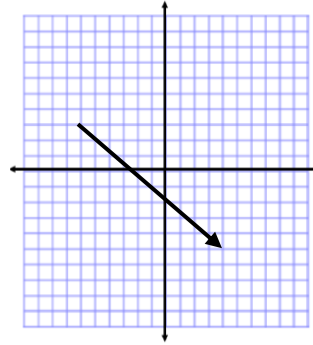
8.) $G = (2, 7)$, $H = (2, 3)$

Find the direction and magnitude for each of the following vectors. Then write in component form and $ai + bj$ form.

9.)



10.)



Use the given information to find the vector algebraically.

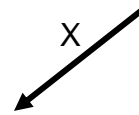
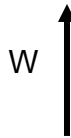
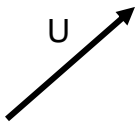
$$\vec{V} = \langle 3, 2 \rangle, \vec{U} = \langle -6, 2 \rangle, R = (-2, 11), S = (4, -5)$$

11.) $\vec{U} - \vec{V}$

12.) $\vec{U} + \vec{RS}$

13.) $2\vec{U} - 3\vec{ST}$

Find the resultant vector geometrically:



14.) $U + V$

15.) $2U - V$

16.) $W + 2X$

For each of the following find

- a) the dot product $v \cdot w$
- b) the angles between v and w ,
- c) the unit vector of v

17.) $v = i - j$ and $w = i + j$

18.) $v = \sqrt{3}i - j$ and $w = i + j$