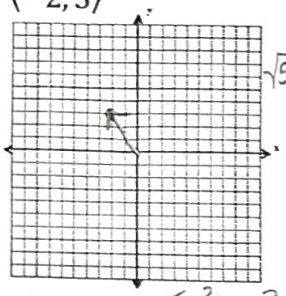
Pre—Calculus Name: Key

Drawing VECTORS

Draw each of the following vectors. & Determine the unit vector.

1) $\langle -2, 3\rangle$

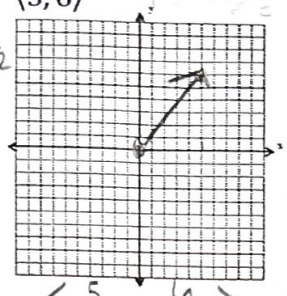
$\sqrt{(-2)^2+3^2}$
$\sqrt{13}$



unit vector $\left\langle \frac{-2}{\sqrt{13}}, \frac{3}{\sqrt{13}} \right\rangle$

2) $\langle 5, 6\rangle$

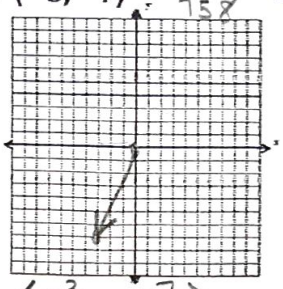
$\sqrt{5^2+6^2}$
$\sqrt{61}$



$\left\langle \frac{5}{\sqrt{61}}, \frac{6}{\sqrt{61}} \right\rangle$

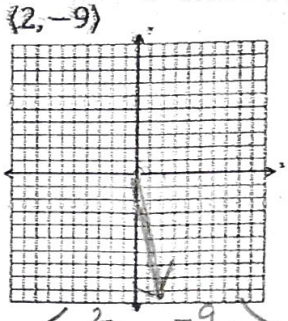
3) $\langle -3, -7\rangle$

$\sqrt{(-3)^2+(-7)^2}$
$\sqrt{58}$



$\left\langle \frac{-3}{\sqrt{58}}, \frac{-7}{\sqrt{58}} \right\rangle$

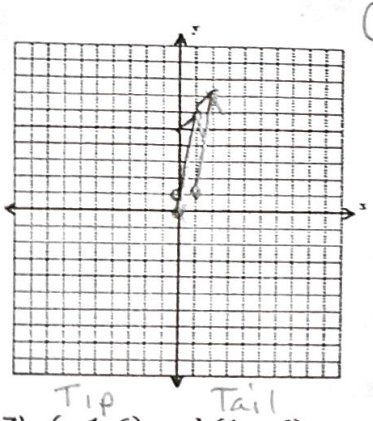
4) $\langle 2, -9\rangle$



$\left\langle \frac{2}{\sqrt{85}}, \frac{-9}{\sqrt{85}} \right\rangle$

Draw the vector between the points. The first point is the tip, the second point is the tail. Find the component form, then draw a vector with the same component form in a different location.

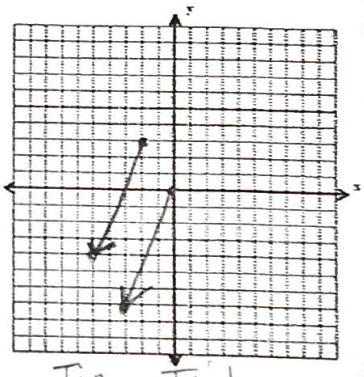
5) $(2, 7)$ and $(1, 1)$
Tip Tail



Tip Tail

Component form
$\langle 2-1, 7-1\rangle$
$\langle 1, 6\rangle$

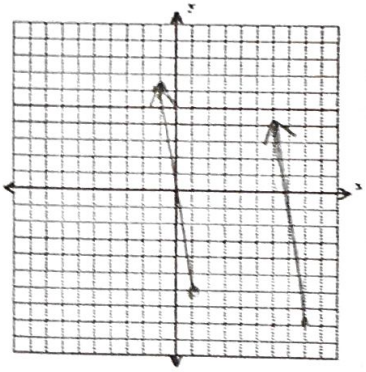
6) $(-5, -4)$ and $(-2, 3)$
Tip Tail



Tip Tail

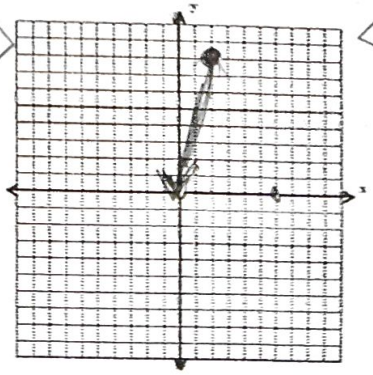
Component form
$\langle -5--2, -4-3\rangle$
$\langle -3, -7\rangle$

7) $(-1, 6)$ and $(1, -6)$



Component form
$\langle -1-1, 6--6\rangle$
$\langle -2, 12\rangle$

8) $(0,0)$ and $(2, 8)$



$\langle 0-2, 0-8\rangle$
$\langle -2, -8\rangle$

9) What do you notice about the vector from the two points versus the vector in component form in #5? In #8?

<horizontal dist, vertical distance>
When the tail at the origin the terminal point is the component form of a vector