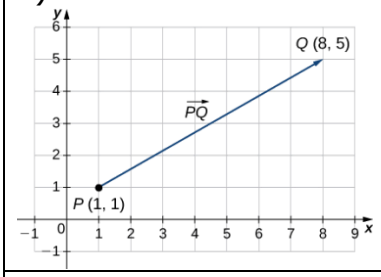
Pre-Cal CW 6.3-6.4 Vectors – Non Calculator

For #'s 1 and 2, Find the component form and magnitude for:

1)



2) Initial point of $(-3,7)$

Terminal point of $(1,5)$

For #'s 3-6, Given vectors **u, v,** and **w:** $u=\langle -2,4\rangle$; $v=\langle 3,-1\rangle$; $w=\langle 5,3\rangle$. Find:

3) **v** + 2**w**

4) 3**u** – **w**

5) 3**v** • **w**

6) (**v** • **u**)**w**

For #'s 7 and 8, find a unit vector, **u**, in the direction of the given vector.

7) $v=\langle -3,5\rangle$

8) $w=2i-3j$

9) Find the vector **v** with the given magnitude and the same direction as **u**.

$\|v\|=9$ $u=\langle 5,6\rangle$

10) Find the magnitude and direction angle of vector **v.**

$\mathbf{v}=\frac{\sqrt{3}}{2}\mathrm{i}-\frac{1}{2}\mathrm{j}$

11) Find the component form of **v** given its magnitude and the angle it makes with the positive x-axis.

$\|v\|=\frac{8}{3}$ $\theta=150^{o}$

12) Find the angle between the vectors (Write your answer in terms of cosine inverse).

$u=\ 7i-2j$

$v=-8i+6j$

13) Determine whether **u** and **v** are orthogonal, parallel, or neither.

$u=\ 3i+4j$

$v=-9i-12j$