East Los Angeles College
Department of Mathematics
Math 241
Test 4-Take Home

1. Let $\bar{v} = 2\bar{\imath} + 5\bar{\jmath}$ and $\bar{w} = -\bar{\imath} + 3\bar{\jmath}$. Graph $\bar{v}$, $\bar{w}$, and use the parallelogram law to graph the resultant vector $\bar{v}$+$\bar{w}$ and the difference vector $\bar{v}$-$\bar{w}$ on the same coordinate system.

Determine:

2. $\bar{v}$+$\bar{w}$
3. $\bar{v}$-$\bar{w}$
4. $3\bar{v}$
5. $2\bar{w}$
6. $2\bar{v} + 3\bar{w}$
7. $|\bar{v}|$
8. $|\bar{w}|$
9. $|\bar{v} + \bar{w}|$
10. $|\bar{v} - \bar{w}|$
11. $|\bar{v}| - |\bar{w}|$
12. $|2\bar{v} + 3\bar{w}|$
13. The direction of $\bar{v}$
14. The direction of $\bar{w}$
15. The direction of $\bar{v}$+$\bar{w}$
16. The direction of $2\bar{v} + 3\bar{w}$

Find the horizontal and vertical components of the vector and write in $\bar{\imath}$ and $\bar{\jmath}$ form.

17. $|\bar{v}|$=$\sqrt{3}$ and $\theta = 28^o$
18. $|\bar{v}|$=14.6 and $\theta = 255^o$

Determine the magnitude and direction(degrees) of the vectors.

19. $\bar{v} = \langle 4, -1 \rangle$
20. $\bar{v} = \langle \frac{1}{\sqrt{2},}, -\frac{1}{\sqrt{2}} \rangle$

Answer Sheet

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Graph