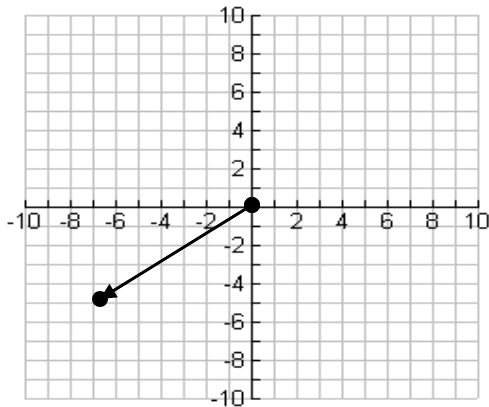


1. Show that vector u and vector v are equal
 Vector u : initial: $(2, -5)$, terminal: $(-1, 4)$
 Vector v : initial: $(7, 1)$, terminal: $(4, 10)$

2. Find the component form and the magnitude of the vector v .



Find a.) $u - v$ b.) $-3u + 2v$ c.) $-v + 5u$

3. $u = \langle 2, 3 \rangle$ $v = \langle -3, 0 \rangle$

4. $u = \langle 2, -1 \rangle$ $v = \langle -4, 7 \rangle$

Find the magnitude and direction of each vector.

5. $u = \langle 3, -5 \rangle$

6. $v = \langle -2, 3 \rangle$

Find the component form given magnitude and direction

7. $\|v\| = 2$ $\theta = -53^\circ$

8. $\|v\| = 3$ $\theta = 60^\circ$

9. $\|v\| = 4$ $\theta = 110^\circ$

Cumulative Review Questions from Tests 1-6:

1. Identify the following conics: a. $\frac{(x-3)^2}{10} - \frac{y^2}{4} = 1$

b. $(x+1)^2 + y^2 = 16$

2. Multiply the following matrices: $\begin{bmatrix} 2 & 9 \\ -7 & 3 \end{bmatrix} \cdot \begin{bmatrix} 6 & -4 \\ 0 & 3 \end{bmatrix}$

3. Solve the linear system:
 $7x + 4y = -17$
 $8x + 5y = -19$

4. Find a positive co-terminal angle to: a. $\theta = -\frac{2\pi}{5}$ b. $\theta = \frac{\pi}{7}$

5. If $\tan \theta = -\frac{5}{4}$ and θ is in quadrant 4, what is the exact value of $\cos \theta$?

6. Find the reference angle: a. $\theta = 210^\circ$ b. $\theta = 315^\circ$

7. Find the exact value of the following function: $\sin\left(-\frac{4\pi}{3}\right)$

8. Evaluate $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right)$ in degrees and radians

9. Find the amplitude, period, horizontal shift, and vertical shift for $f(x) = 3\sin\left(x + \frac{\pi}{4}\right) + 7$.

10. Evaluate $\arcsin\left(-\frac{1}{2}\right)$

11. Simplify: $\frac{\sec^2 \theta - 1}{\sin^2 \theta}$

12. Solve for x: $2\sin x - \sqrt{3} = 0$

13. Evaluate: $\sin 105^\circ$ (use $105^\circ = 45^\circ + 60^\circ$) $\sin(\alpha \pm \beta) = \sin \alpha \cos \beta \pm \cos \alpha \sin \beta$

14. Given a triangle with $A = 20^\circ, B = 50^\circ$, and $a = 5$, find c .

15. What is the area of a triangle with sides of 5, 7, and 9. Use $Area = \sqrt{s(s-a)(s-b)(s-c)}$