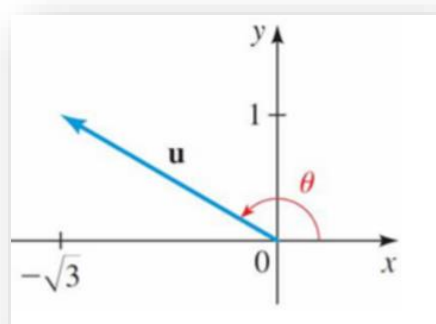
9.1: (Vectors in Two Dimensions)

If the vector u has magnitude 8, direction angle $120°$ and the vector $v = \sqrt{3}i + 4j$, then the vector $u - \sqrt{3}v =$ a) $\langle -7,\ 0 \rangle$ b) $\langle 2, -1 \rangle$ c) $\langle 7,\ 8\sqrt{3} \rangle$ d) $\langle -7,\ -8\sqrt{3} \rangle$ e) $\langle -3 + 4\sqrt{3},\ -4 + 4\sqrt{3} \rangle$	Direction angle and Operations on vectors
Let $\mathrm{u} = \mathrm{i}$ and $\mathrm{v} = 2\sqrt{3}\mathrm{i} - 4\mathrm{j}$ be two vectors. If θ is the direction angle of the vector $2\mathrm{u} - \sqrt{3}\mathrm{v}$, then $\sin\theta =$ A) $\frac{\sqrt{3}}{2}$ B) $-\frac{\sqrt{3}}{2}$ C) $\frac{1}{2}$ D) $-\frac{1}{2}$ E) $-\frac{\sqrt{2}}{2}$	Direction angle and Operations on vectors

If u is a vector of magnitude $8\sqrt{2}$ and direction $135°$ and $v = 3i - 2j$ then the vertical component of the vector $w = u + 2v$, is A) 4 B) -4 C) -2 D) 6 E) 2	Direction angle and Operations on vectors
If the vector u has magnitude 8 and directional angle π, and vector $v = 4i + 4\sqrt{3}j$, then the directional angle α of the vector $u + v$ is A) $\alpha = \frac{2\pi}{3}$ B) $\alpha = \frac{11\pi}{6}$ C) $\alpha = \frac{4\pi}{3}$ D) $\alpha = \frac{5\pi}{6}$ E) $\alpha = \frac{5\pi}{3}$	Direction angle and Operations on vectors
Given the vectors $u = \langle 9,\ 24 \rangle$, and $v = 10i + 12j$. If $w = \frac{1}{2}u - \frac{3}{4}v$, then the direction angle of the vector w is a) $\frac{3\pi}{4}$ b) $\frac{7\pi}{4}$ c) $\frac{5\pi}{4}$ d) $\frac{11\pi}{6}$ e) $\frac{5\pi}{3}$	Direction angle and Operations on vectors

If $u = \langle 1,0 \rangle$ and $v = \langle 2\sqrt{3}, -4 \rangle$, then the magnitude r and the direction angle θ of the vector $2u - \sqrt{3}v$ are a) $r = 8, \theta = 120°$ b) $r = 8, \theta = 150°$ c) $r = 16, \theta = 210°$ d) $r = 4, \theta = 300°$ e) $r = 4, \theta = 330°$	Direction angle and Operations on vectors
If $\mathrm{u} = \langle -2\sqrt{3}, 4 \rangle$ and $\mathrm{v} = \sqrt{3}\mathrm{i} + \mathrm{j}$, then the direction angle of the vector $\mathrm{u} - \mathrm{v}$ is A) $150°$ B) $135°$ C) $30°$ D) $60°$ E) $120°$	Direction angle and Operations on vectors
In the adjacent figure, the magnitude M and the direction θ of the vector u, is A) $M = 2,\ \theta = \frac{5\pi}{6}$ B) $\mathrm{M} = \sqrt{2},\ \theta = \frac{5\pi}{6}$ C) $\mathrm{M} = \sqrt{2},\ \theta = \frac{2\pi}{3}$ D) $\mathrm{M} = 2,\ \theta = \frac{2\pi}{3}$ E) $\mathrm{M} = 2,\ \theta = \frac{11\pi}{6}$ 	Magnitude and Direction of a Vector.

Given the vectors $u = \langle -4,10 \rangle$, and $v = \langle -5,1 \rangle$. If the vector $w = \langle a, b \rangle$ is a unit vector in the opposite direction of $\frac{1}{2}u - v$, then $a + b$ is equal to a. $-\frac{7}{5}$ b. $-\frac{3}{5}$ c. $-\frac{2}{5}$ d. $-\frac{4}{5}$ e. $-\frac{9}{5}$	Unit vector and Operations on vectors
Let $u = \langle -6,1 \rangle$ and $v = \langle -4,3 \rangle$. If $w = 4u - 3v$, then a unit vector having the same direction as w is A) $\langle -\frac{12}{13}, -\frac{5}{13} \rangle$ B) $\langle \frac{12}{13}, -\frac{5}{13} \rangle$ C) $\langle -\frac{12}{13}, \frac{5}{13} \rangle$ D) $\langle \frac{4}{5}, -\frac{3}{5} \rangle$ E) $\langle \frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}} \rangle$	Unit vector and Operations on vectors