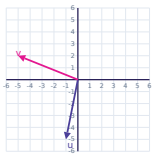
Vectors: Direction, Unit Vectors & Angles · 1

u = <-1, -5> and v = <-5, 2>. Find 3u - 2v.



Vectors: Direction, Unit Vectors & Angles · 2

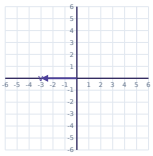
Find the unit vector in the direction of v = <-4, 3>.

Vectors: Direction, Unit Vectors & Angles · 3

A vector v has magnitude 12 and direction angle 60°. Write v in component form.

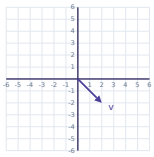
Vectors: Direction, Unit Vectors & Angles · 4

Find the direction angle of v = <-3, 0>.



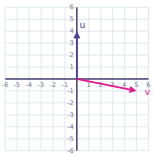
Vectors: Direction, Unit Vectors & Angles · 5

Find the direction angle of v = <2, -2>.



Vectors: Direction, Unit Vectors & Angles · 6

u = <0, 4> and v = <5, -1>. Find 3u + 3v.

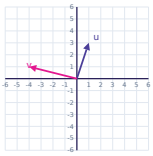


Vectors: Direction, Unit Vectors & Angles · 7

Find the unit vector in the direction of v = <7, 24>.

Vectors: Direction, Unit Vectors & Angles · 8

u = <1, 3> and v = <-4, 1>. Find 2u + 3v.



Vectors: Direction, Unit Vectors & Angles · 2

ANSWER

$$\frac{4}{-5}\ \frac{3}{5}$$

Vectors: Direction, Unit Vectors & Angles · 1

ANSWER

$\langle 7, -19 \rangle$

Vectors: Direction, Unit Vectors & Angles · 4

ANSWER

$180°$

Vectors: Direction, Unit Vectors & Angles · 3

ANSWER

$\langle 6, 6\sqrt{3} \rangle$

Vectors: Direction, Unit Vectors & Angles · 6

ANSWER

$\langle 15, 9 \rangle$

Vectors: Direction, Unit Vectors & Angles · 5

ANSWER

$315°$

Vectors: Direction, Unit Vectors & Angles · 8

ANSWER

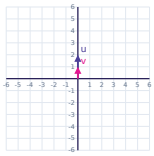
$\langle -10, 9 \rangle$

Vectors: Direction, Unit Vectors & Angles · 7

ANSWER

$$\frac{7}{25}\ \frac{24}{25}$$

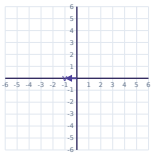
u = <0, 2> and v = <0, 1>. Find 3u - 3v.



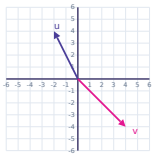
Find the unit vector in the direction of v = <24, -7>.

A vector v has magnitude 6 and direction angle 30°. Write v in component form.

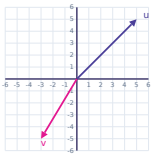
Find the direction angle of v = <-1, 0>.



u = <-2, 4> and v = <4, -4>. Find 4u + 2v.

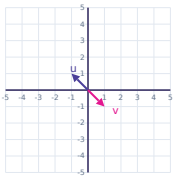


u = <5, 5> and v = <-3, -5>. Find 4u + 2v.



Find the unit vector in the direction of v = <12, -5>.

Find the angle between u = <-1, 1> and v = <1, -1>.



Vectors: Direction, Unit Vectors & Angles · 10

ANSWER

$$\left\langle \frac{24}{25}, -\frac{7}{25} \right\rangle$$

Vectors: Direction, Unit Vectors & Angles · 9

ANSWER

$$\langle 0, 3 \rangle$$

Vectors: Direction, Unit Vectors & Angles · 12

ANSWER

$$180°$$

Vectors: Direction, Unit Vectors & Angles · 11

ANSWER

$$\langle 3\sqrt{3}, 3 \rangle$$

Vectors: Direction, Unit Vectors & Angles · 14

ANSWER

$$\langle 14, 10 \rangle$$

Vectors: Direction, Unit Vectors & Angles · 13

ANSWER

$$\langle 0, 8 \rangle$$

Vectors: Direction, Unit Vectors & Angles · 16

ANSWER

$$180°$$

Vectors: Direction, Unit Vectors & Angles · 15

ANSWER

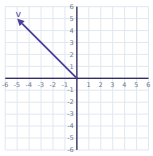
$$\left\langle \frac{12}{13}, -\frac{5}{13} \right\rangle$$

Find the unit vector in the direction of v = <6, 8>.

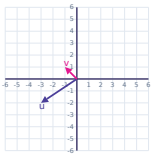
A vector v has magnitude 6 and direction angle 120°. Write v in component form.

Find k so that <6, -6> and <-6, k> are perpendicular.

Find the direction angle of v = <-5, 5>.



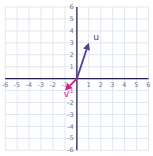
u = <-3, -2> and v = <-1, 1>. Find 3u - 2v.



A vector v has magnitude 2 and direction angle 150°. Write v in component form.

Find k so that <-2, -1> and <-5, k> are perpendicular.

u = <1, 3> and v = <-1, -1>. Find 2u + 3v.



Vectors: Direction, Unit Vectors & Angles · 18

ANSWER

$\langle -3, 3\sqrt{3} \rangle$

Vectors: Direction, Unit Vectors & Angles · 17

ANSWER

$\left\langle \frac{3}{5}, \frac{4}{5} \right\rangle$

Vectors: Direction, Unit Vectors & Angles · 20

ANSWER

$135°$

Vectors: Direction, Unit Vectors & Angles · 19

ANSWER

$k = -6$

Vectors: Direction, Unit Vectors & Angles · 22

ANSWER

$\langle -\sqrt{3}, 1 \rangle$

Vectors: Direction, Unit Vectors & Angles · 21

ANSWER

$\langle -7, -8 \rangle$

Vectors: Direction, Unit Vectors & Angles · 24

ANSWER

$\langle -1, 3 \rangle$

Vectors: Direction, Unit Vectors & Angles · 23

ANSWER

$k = 10$