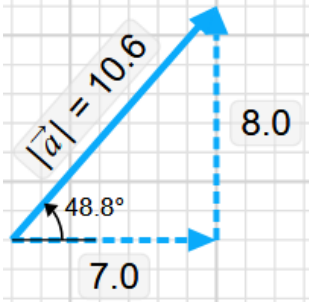


Vector Addition Activity Answers

1.

(a)



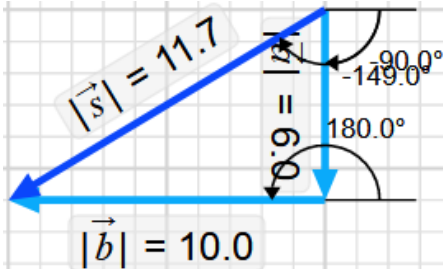
- (i) 8.0 km/h
- (ii) 7.0 km/h

(b)

x-component	y-component
$10.6 \cos 48.8 = 7.0 \text{ km/h}$	$10.6 \sin 48.8 = 8.00 \text{ km/h}$

2.

(a)



- (i) 11.7 km
- (ii) 59° W of S

(b) $c = \sqrt{a^2 + b^2} = \sqrt{(10.0)^2 + (6.0^2)} = 11.7 \text{ km}$
 $\theta = \tan^{-1}\left(\frac{10}{6}\right) = 59.0^\circ$

3.

(a)

	x	y
a	$5 \cos 36.9 = 4.0$	$5 \sin 36.9 = 3.0$
b	$-7.2 \cos 33.7 = -6.0$	$7.2 \sin 33.7 = 4.0$
c	-2.0	7.0

$$c = \sqrt{a^2 + b^2} = \sqrt{(-2.0)^2 + (7.0)^2} = 7.3$$

$$\theta = \tan^{-1}\left(\frac{7.0}{2.0}\right) = 74.1^\circ$$

7.3 m/s at 74.1° N of W

(b)

