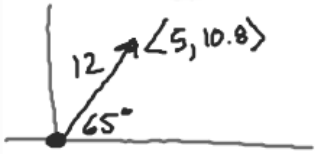
C) A ship is heading due south at 15 mph. The current is flowing northwest at 3 mph. Find the actual bearing and speed of the ship.

Shooting a basketball: A basketball is shot at an angle 65° with an initial speed of 12m/sec.

a. Find the component form of the initial velocity.



$\langle 5, 10.8 \rangle$ $\langle 12\cos 65^\circ, 12\sin 65^\circ \rangle$

$\langle 5.071, 10.875 \rangle \leftarrow$

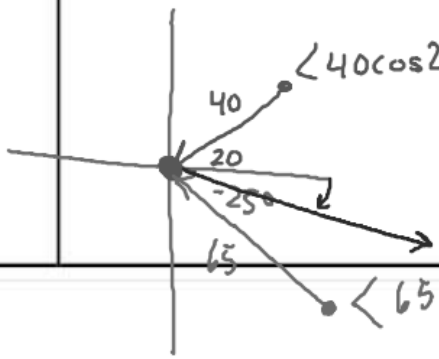
b. Give an interpretation of the horizontal and vertical components of the velocity.

How fast the ball is moving Horizontally 5 m/sec

How fast the ball is moving vertically w/o the effects of gravity

Force → Magnitude

Combining Forces: A force of 40 lbs acts on an object at angle of 20°. A second force of 65 pounds acts on the object at an angle if -25°. Find the direction and magnitude of the resultant force.



$\langle 40\cos 20, 40\sin 20 \rangle =$

$\langle 65\cos(-25), 65\sin(-25) \rangle$

$\langle 96.5, -13.8 \rangle$

$\sqrt{A^2 + B^2} = 97.4$

Ref $\measuredangle = -8.13^\circ$

↑ Direction