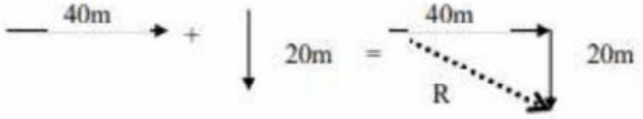
Vector Addition using the Pythagorean Theorem

Directions: *Use the Pythagorean Theorem to find the resultant magnitude only for the addition of the following vectors. Show the vector addition, the resultant, and the work using the Pythagorean Theorem.*

Example: You walk 40 meters east, then 20 meters south.



$a^2 + b^2 = c^2$ becomes:

$40^2 + 20^2 = R^2$

$1600 + 400 = R^2$

$R = \sqrt{2000} = 44.7\text{m}$

1. You move at 3 m/s directly north, then at 5 m/s directly west.

2. You drive 100 kilometers south, then 50 kilometers west.

3. You pull down with a force of 60 pounds, then to the right with a pull force of 20 pounds.

4. You accelerate in your rocket both 10 m/s^2 up and 7 m/s^2 horizontally.