

Vectors Review

Monday, October 28, 2013
10:40 AM

Wed: Quiz

15 marks?

Vector

Direction
magnitude

velocity, force
acceleration, displacement
weight, momentum

Scalar

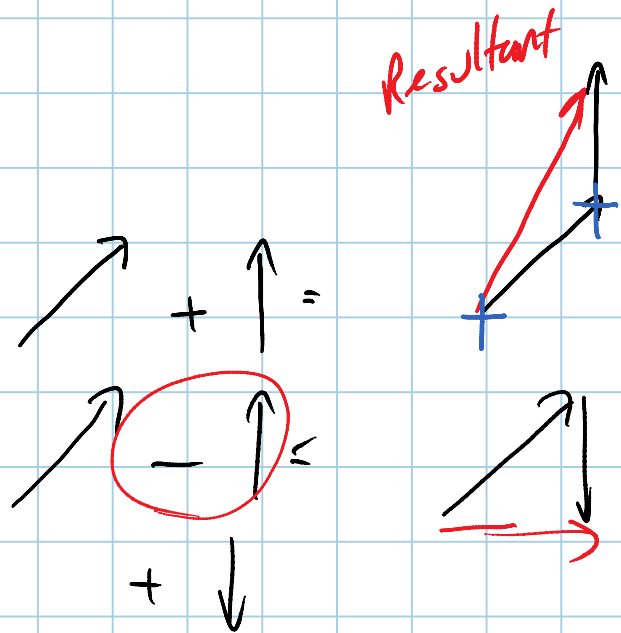
magnitude

speed, time
mass, distance
energy, temp

• Components

- sin, cos

• add / subtract



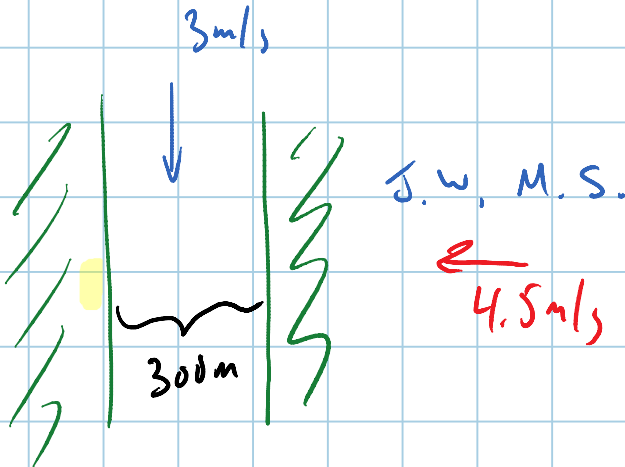
Problems

- river crossing

- air speed

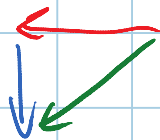
- wording "from the ..." opposite direction

"wishes to ..." resultant



a) how long to cross

b) how far down stream assuming
W only for swimmer



$$v = \frac{d}{t}$$

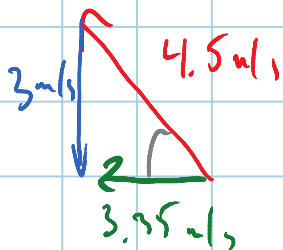
$$t = \frac{d}{v} = \frac{300}{4.5} \approx 66.67$$

$$d = v \cdot t$$

$$= (3 \text{ m/s})(66.67)$$

$$= 200 \text{ m}$$

c) what angle d) how long to get to gold metal?



$$\cos^{-1}\left(\frac{3}{4.5}\right) = 48^\circ$$

$$t = \frac{d}{v} = \frac{300}{3.35}$$

$$\approx 90 \text{ s}$$