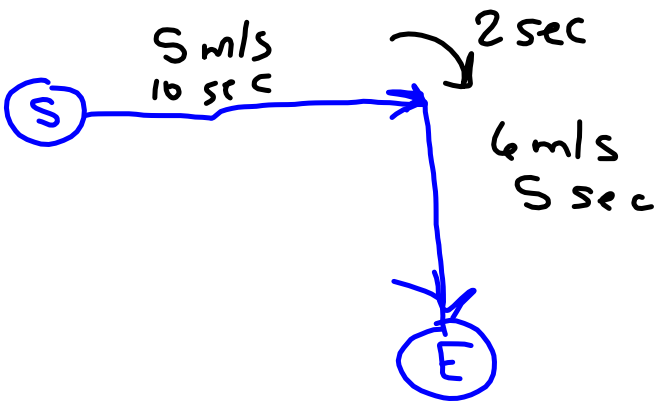
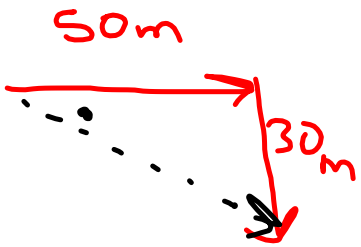
Physics 112
Tuesday Sept 12th

Homework Question





a) distance → 80 m

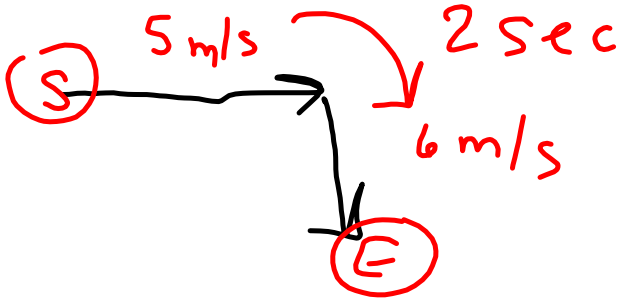
b) displacement → 58.3 m E 31° S

c) speed = $\frac{\text{distance}}{\text{time}} = \frac{80\text{m}}{17\text{ sec}} = 4.7\text{ m/s}$

d) velocity = $\frac{\text{displacement}}{\text{time}} = \frac{58.3\text{ m E 31 S}}{17\text{ sec}}$

$V = 3.4\frac{\text{m}}{\text{s}}$ E 31 S

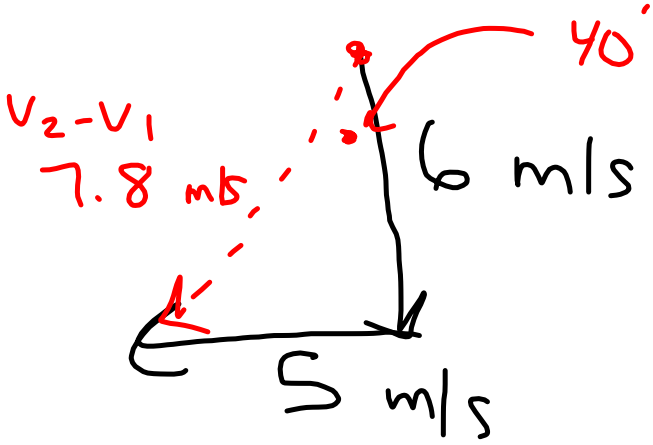
e) acceleration on turn.



$$a = \frac{V_2 - V_1}{t} = \frac{6\ m/s\ South - 5\ m/s\ East}{2\ sec}$$

6 m/s South - 5 m/s East

6 m/s South + 5 m/s West



$\underline{V_2 - V_1}$

7.8 m/s S 40 W

$\tan\theta = 5/6$

$\theta = 40°$

$$a = \frac{v_2 - v_1}{t}$$

$$= \frac{7.8\ m/s \quad S40W}{2\ s}$$

$$a = 3.9\ m/s^2 \quad S40W$$

$V_A = 10\ m$ North

$V_B = 15\ m$ South

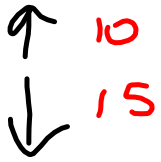
(a) $V_A + V_B$

(b) $V_B + V_A$

(c) $V_A - V_B$

(d) $V_B - V_A$

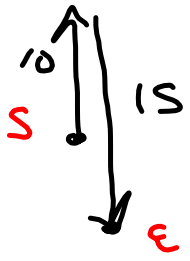
V_A = 10 m North
V_B = 15 m South



a) $V_A + V_B$

10 N + 15 S

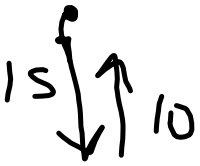
10↑ + ↓15



5 m South

b) $V_B + V_A$

15↓ + ↑10



5 m South

(c) $V_A - V_B$

10 N - 15 S

10 N + 15 N

25m North

(d) $V_B - V_A$

15 S - 10 N

15 S + 10 S

25m South

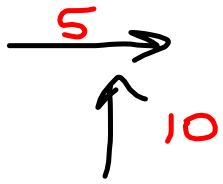
$V_A = 5\,m$ East
$V_B = 10\,m$ North

a) $V_A + V_B$

b) $V_A - V_B$

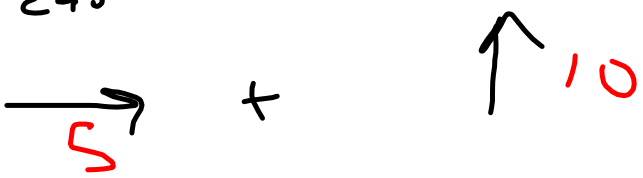
c) $V_B - V_A$

V_A = 5 m East
V_B = 10 m North

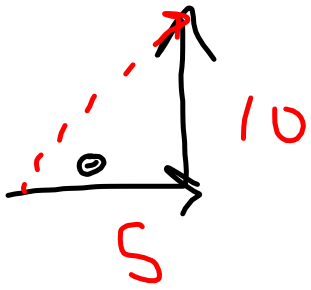


a) $V_A + V_B$

5 East + 10 m North

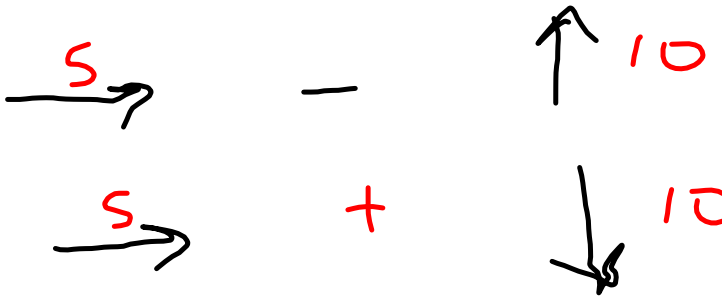


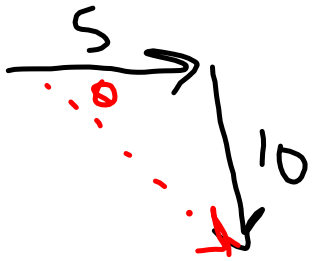
11.2 m E63N



(b) $V_A - V_B$

5 m East − 10 m North





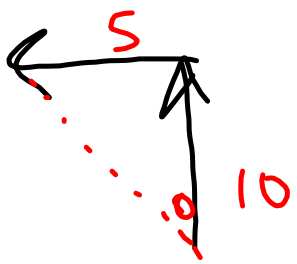
11.2 m E 63 S

(c) $V_B - V_A$

10 m North − 5 m East

10 ↑ − 5 →

10 ↑ + 5 ←



11.2 m N 27 W

$V_A = 10$ m East

$V_B = 15$ m E 30 N

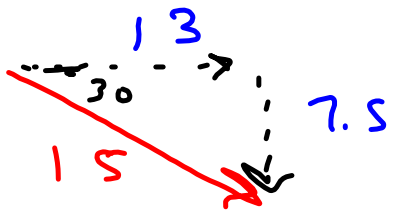
a) $V_A + V_B$

b) $V_A - V_B$

c) $V_B - V_A$

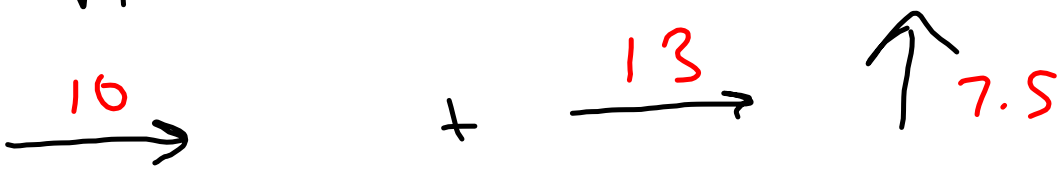
V_A = 10 m East

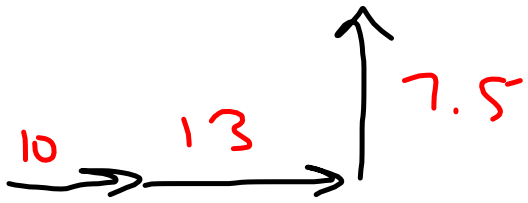
V_B = 15 m E 30 N

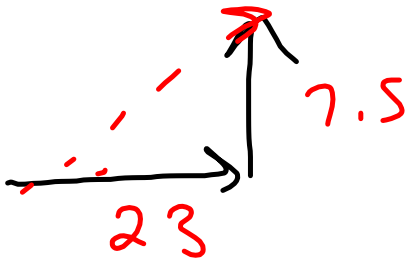


a) $V_A + V_B$

10 m East + 15 m E 30 N



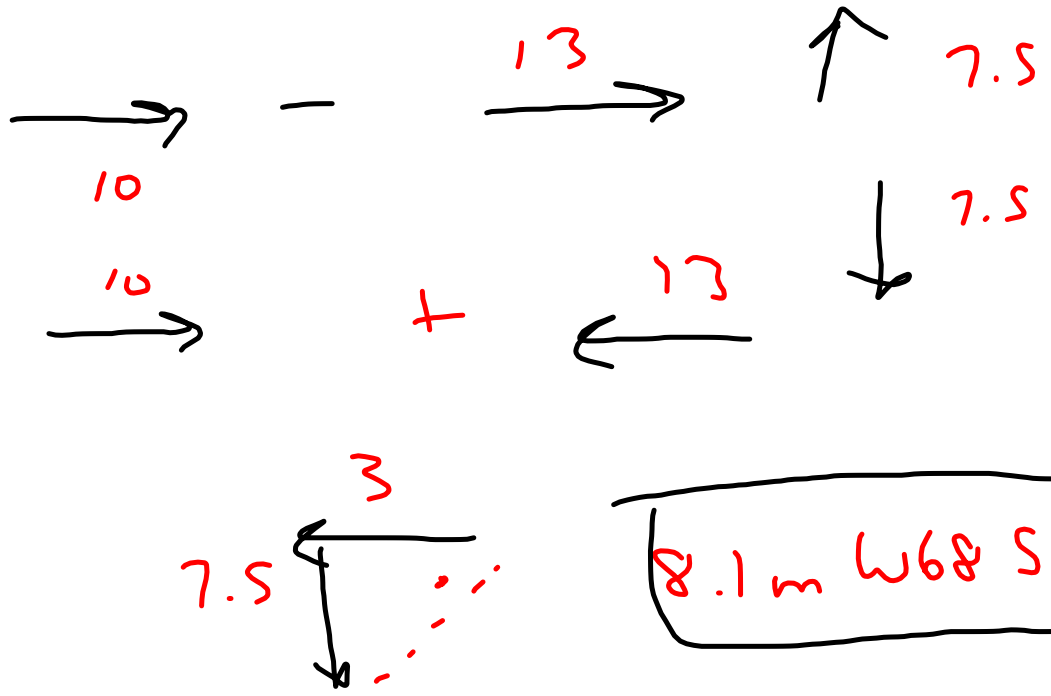




24.2m E18N

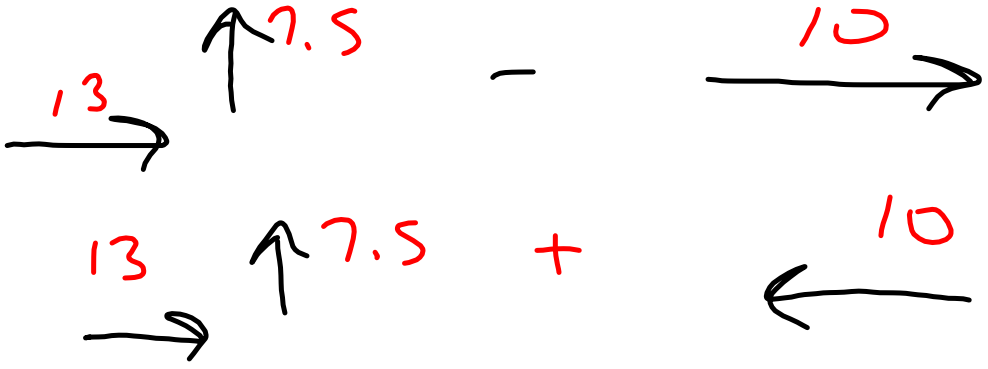
(b) $v_A - v_B$

10 m East - 15 m E 30 N



(c) $V_B - V_A$

15m E30N − 10m East



8.1 m E68 N