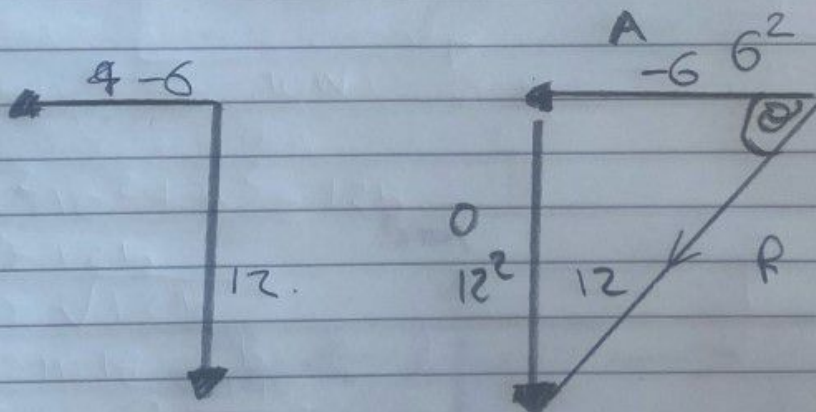
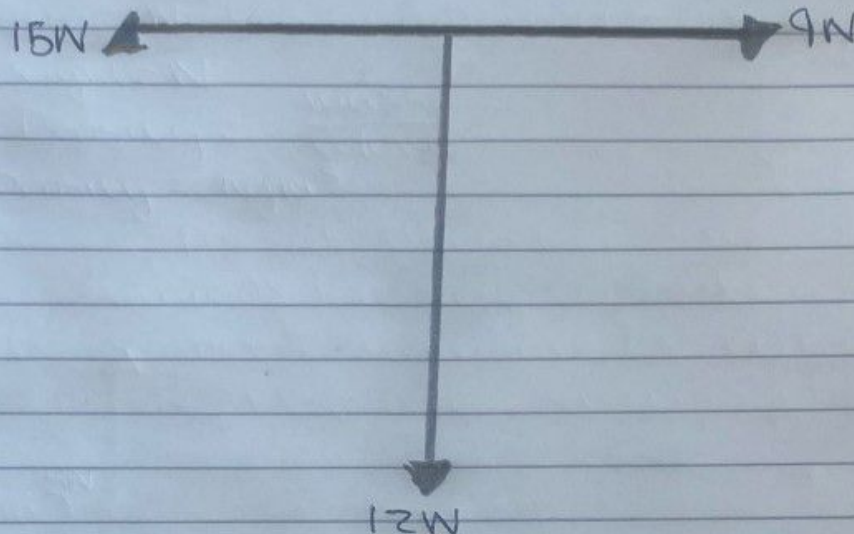


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$$-15 + 9 = -6$$



$$R^2 = 12^2 + 6^2 = 612$$

$$R = \sqrt{612}$$

$$R = 24.73$$

$$\tan \theta = \frac{12}{6}$$

$$\theta = \tan^{-1}\left(\frac{12}{6}\right)$$

$$\theta = \cancel{4.20}^\circ 63.43^\circ$$



$$\text{Bearing} = \cancel{285}^\circ 206.57^\circ$$

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1.

a) Area = m^2

b) volume = m^3

c) mass = kg

d) Force = N

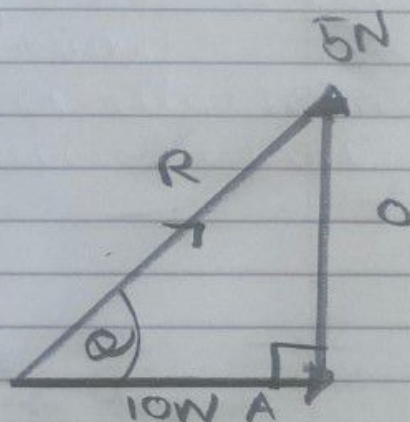
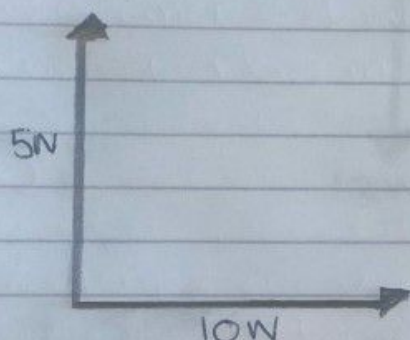
e) weight = N

2. Density = $\frac{\text{mass}}{\text{volume}}$

Density = kgm^3

3.

a)



$$R^2 10^2 + 5^2 = 125$$

$$R = 125$$

$$R = \sqrt{125}$$

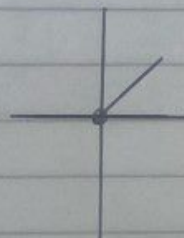
$$R = 11.18$$

$$\tan \theta = \frac{5}{10}$$

$$\theta = \tan^{-1}\left(\frac{5}{10}\right)$$

$$\theta = 26.57^\circ$$

Bearing = 63.43°



Resultant is 11.18 to the right 63.43° above horizontal.

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6) positive to negative

$$b) \frac{1}{\left(\frac{1}{8} + \frac{1}{2}\right)} \quad R_T = \frac{1}{0.67} = R_T = 0.67 \Omega$$

$0.17 \quad 0.5$

$$R_T = 0.67 + 3 + 0.5 = 4.17$$

$$R_T = 4.17 \Omega$$

$$c) I = \frac{V}{R} \quad I = \frac{12}{4.17} = 2.88 A$$

$$d) 2.88 \times 3 = 8.64 V$$

$$e) I = \frac{V}{R} \quad I = \frac{10.56}{2} \quad I = 0.72 A$$

$$f) I = 2.15 A$$

g).

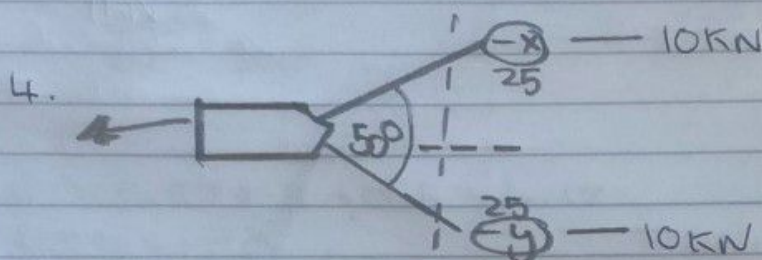
14/11/2022.

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Resultant is 13.47N to the left 63.43 to

Resultant is ~~13.42~~ 13.42 to the left 63.43 below the horizontal.



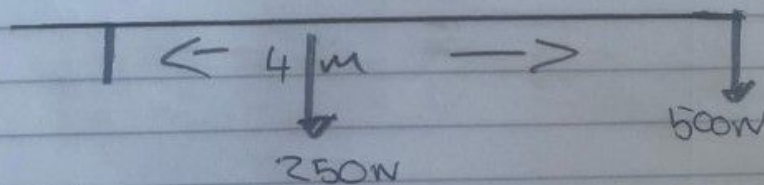
$$90 - 25 = 65$$

$$\sin 65 = 0.91 \quad 10\text{ kN} \times 0.91 = 9.1\text{ kN}$$

$$9.1 \times 2 = 18.2\text{ kN} = 1.8\text{ kN}$$

5.)

5m



Weight distance

$$a) 750\text{ N} \times 5\text{ m} = 3750\text{ N}$$

Weight distance

$$b) 750\text{ W} \times 4\text{ m} = 3000\text{ W}$$