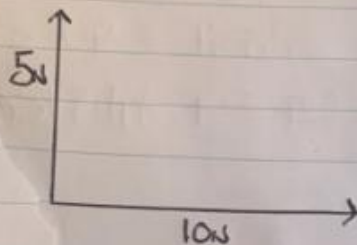


ACHA3000

- 1) A) m^2
 B) m^3
 C) Kg
 D) N
 E) N

2) Kg/m^3

3) A)

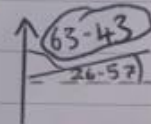


$$\text{MAGNITUDE} = \sqrt{5^2 + 10^2} = \sqrt{125} = 11.18$$

$$\text{DIRECTION} = \theta = \tan^{-1}\left(\frac{y}{x}\right)$$

$$\theta = 26.57^\circ$$

BEARING:



B)



$$R(y) = -12N$$

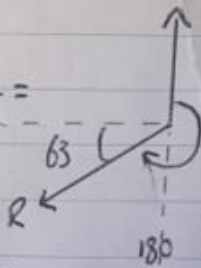
$$R(x) = -6N$$

$$\text{MAGNITUDE} = \sqrt{(-12)^2 + (-6)^2}$$

$$\text{DIRECTION} = 63.43^\circ$$

$$= 13.42$$

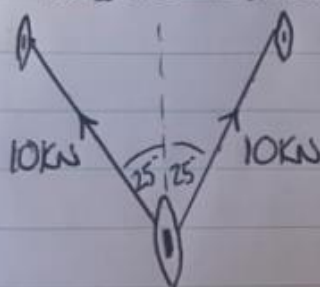
BEARING =



$$180 + (90 - 63.43) = 206.57^\circ$$

$$R = 13.42$$

4)

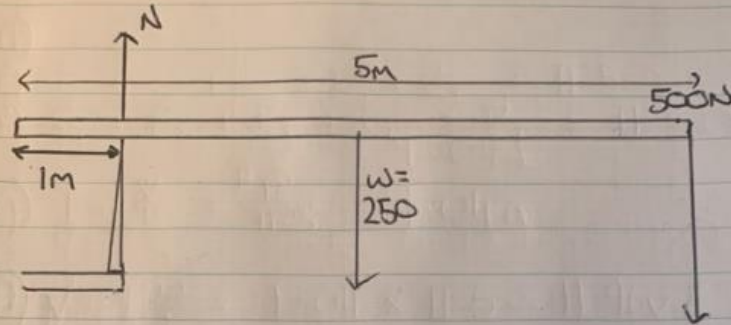


$$\cos 25^\circ \times 10,000$$

$$\text{RESULTANT} = 9.063 \text{ KN} \times 2$$

$$= 18.13 \text{ KN}$$

5)



CWM

$$250 \times 1.5 + 400 \times 4 = 2375\text{N}$$

$$\text{POOL EDGE} = 4750\text{N}$$

b) A)

~~B~~

$$B) R_1 + R_2 + R_3 + R_4 = R_T = 11.5 \Omega$$

$$C) I = \frac{V}{R} = \frac{12}{11.5} = 1.04 \text{ A}$$

$$D) V = IR = 1.04 \times 11.5 = 11.96 \text{ V}$$

$$E) I = \frac{V}{R} =$$

$$V = IR = 1.04 \times 0.5 = 0.52 \text{ V}$$

$$\frac{0.52}{2} = 0.26 \text{ A}$$

$$F) I = \frac{V}{R} = \frac{0.52}{6} = 0.09 \text{ A}$$

$$G) ~~P~~ P = IV$$

$$V = IR$$

$$1.04 \times 12 = 12.48$$

$$R_1 = 0.52 \times 12 = 6.24$$

$$R_2 = 0.26 \times 12 = 3.12$$

$$R_3 =$$

$$\begin{array}{r} 0.26 \\ + 0.09 \\ \hline 0.35 \end{array}$$

$$0.35 \times 3 = 1.05$$