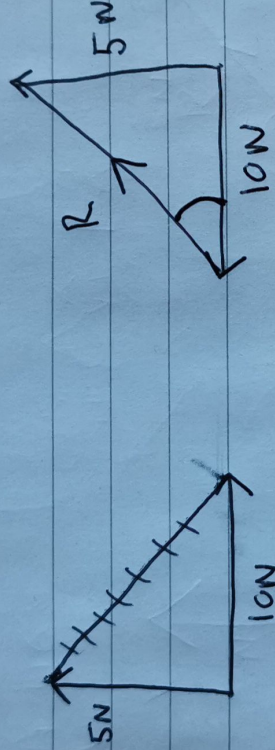


- 1. a.  $m^2$
- b.  $m^3$
- c. kg
- d. N
- e. N

2.  $\text{kg/m}^3$       Density =  $\frac{\text{mass}}{\text{volume}}$

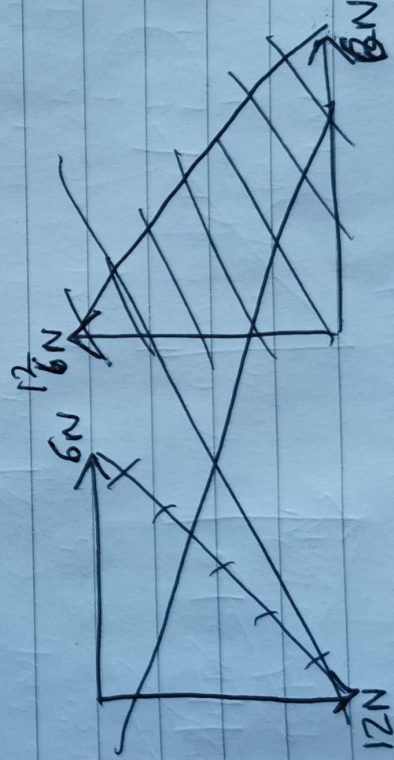
3. a



$R = \sqrt{5^2 + 10^2}$        $R^2 = \frac{125}{100}$        $\Rightarrow \tan^{-1}\left(\frac{5}{10}\right) = 26.57^\circ$   
 $\sqrt{100} = 10$       Resultant =  $11.18$

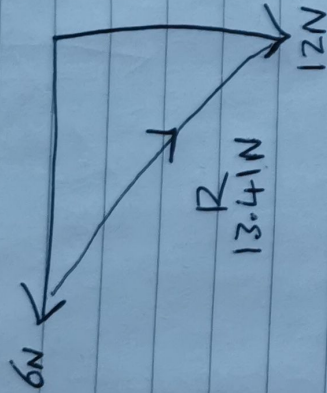
Bearing  $63.43^\circ$        $11.18$

3. a Resultant is ~~5~~ to the right with a Bearing of  ~~$63.43^\circ$~~   $26.57^\circ$  above the horizon with a Bearing of  $63.43^\circ$ .



~~3. b~~

3.6



$$R^2 = 6^2 + 12^2 = 180$$

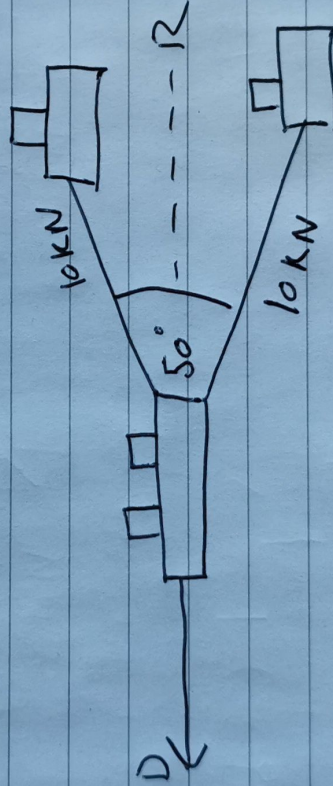
$$R = \sqrt{180} = 13.41 \text{ N}$$

$$\theta = \tan^{-1}\left(\frac{12}{6}\right) = 63.43^\circ$$

Bearing  $206.57^\circ$

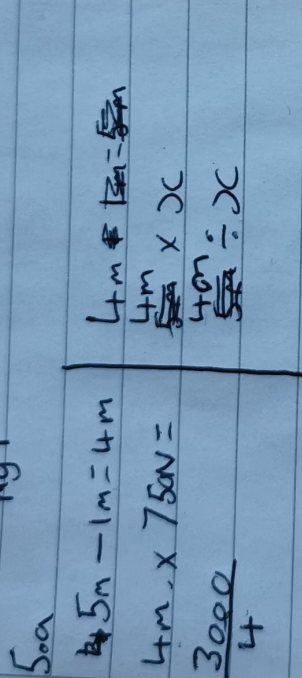
Resultant is  $13.41 \text{ N}$  to the left  $63.43^\circ$  below the horizon with a bearing of  $206.57^\circ$

4.



$$a. 10 \text{ kN } 25^\circ \quad \cos 25^\circ = \frac{R}{10 \text{ kN}} \quad 10 \times 10^3 \cos 25^\circ = 9063.08 \text{ N}$$

b. The Drag on the ship from the tug boats must be equal at  $918126.16 \text{ N}$



0.5.6  $750 \times \frac{4\text{m}}{3000} = 3000\text{N}$  A force of 3000N

25.16-52

$$d \quad 2.88 \times 3 = 8.64 \text{ V}$$

$$E = 2.88 A \times \left( \frac{1}{1} + \frac{1}{2} \right) = 1.92 V \quad \# \text{ on } 96A$$

$$\begin{array}{r} 252 \\ 6 \overline{) 1512} \end{array}$$