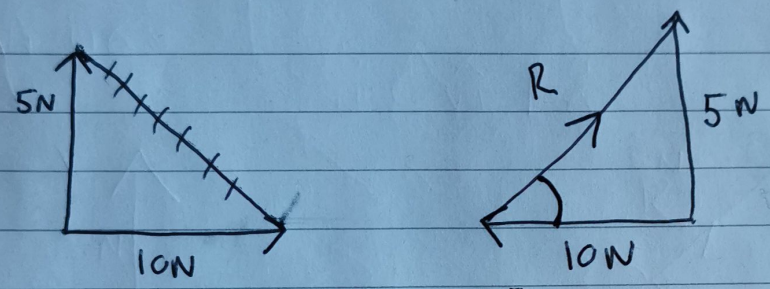
1. a m^2
   b m^3
   c Kg
   d N
   e N

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

3. a



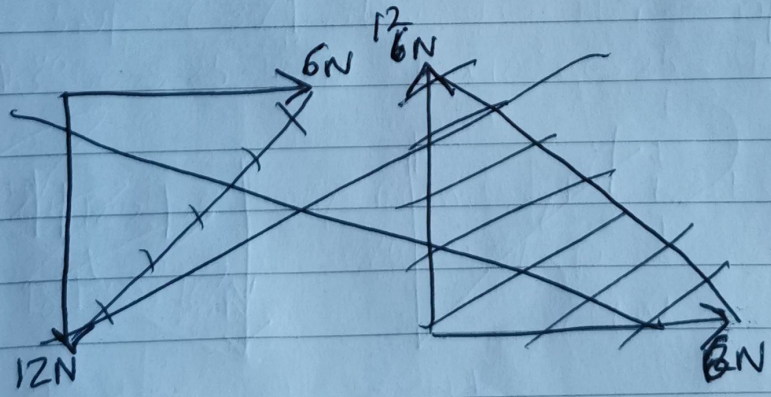
$R = R^2 = 5^2 + 10^2$ $R^2 = 125$ $\ominus$ $\tan^{-1}(\frac{5}{10}) = 26.57°$

$\sqrt{100} = 11.18N$ Resultant = 11.18N

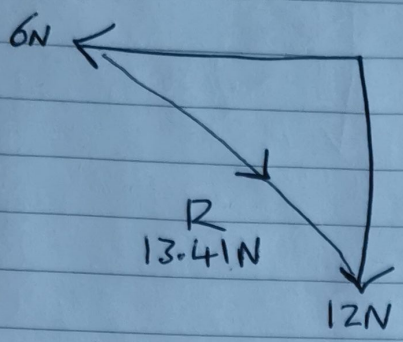
Bearing 63.43°

3. a Resultant is 11.818N to the right ~~with a Bearing of 63.43°~~ 26.57° above the horizon with a Bearing of 63.43°.

~~3. b~~



3.6



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

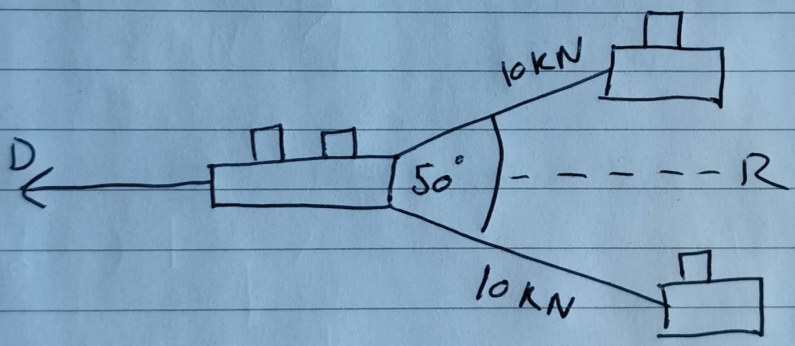
$R = \sqrt{180} = 13.41\ N$

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

Bearing 206.57°

∴ Resultant is 13.41N to the left 63.43° below the horizon with a bearing of 206.57°

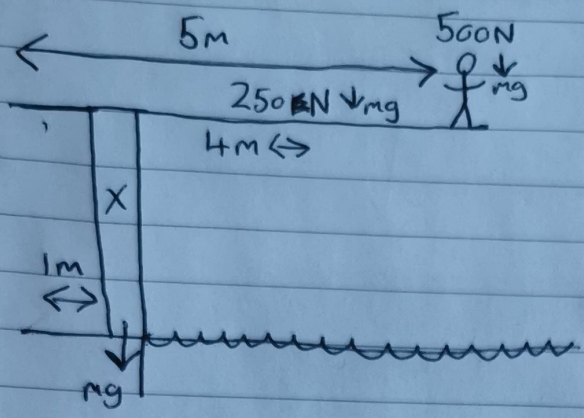
4.



a. $10KN\ 25°\ \cos 25 = \frac{R}{10KN}\quad 10 \times 10^3 \cos 25 = 9063.08N$

b. The Drag on the ship from the tug boats must be equal at 9 18126.16N

5.



5.a

5m − 1m = 4m	4m = 4m
4m × 750N = 3000	4m × X
3000 / 4	4m ÷ X

∴ A force of 750N on the bolts

5.b $750 \times \frac{4m}{4m} = 3000N$ A force of 3000N

6.a current flow in A positive to negative

.b $0.5 + 3 + \frac{1}{\frac{1}{6}+\frac{1}{2}} - \frac{1}{0.5+\frac{1}{6}+\frac{1}{2}+\frac{1}{3}} = 4.16\,\Omega$

.c $\frac{12}{4.16} = 2.88A$

.d $2.88 \times 3 = 8.64V$ $\div 2 = 0.96A$

.E $2.88A \times \left(\frac{1}{\frac{1}{6}+\frac{1}{2}}\right) = 1.92V$ 1.92 ÷ 2 = 0.96A

.f $\frac{1.92V}{3} = 0.32A$

.g 2Ω R2 .6