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ACHA 3000

1) Units for the following:

Area = M^2

Volume = M^3

Mass = kg

Force = N

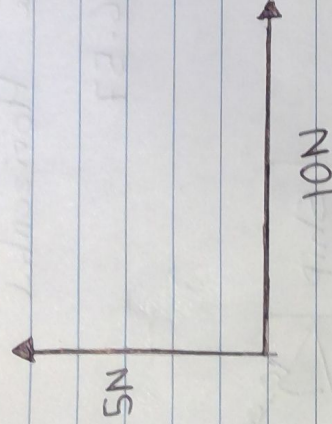
Weight = N

2)

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}}$$

$$\rho = \frac{\text{Mass}}{\text{Volume}}$$

3)



Resultant = 11.18 N to the Right 26.7° Above Horizontal
-a1

Magnitude =

Direction =

Specify the bearing =



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3b) $\tan \theta = \frac{12}{6} = 63.43 = \text{angle below horizontal}$

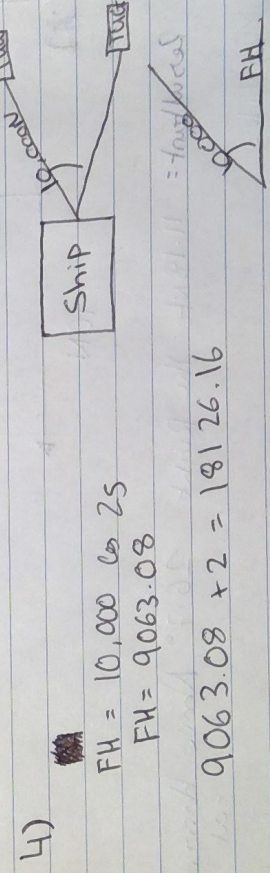
$180 + (90 - 63.43) = 206.57$

Bearing = 206.57

$6^2 \times 12^2 = F^2 = 13.42 \text{ N}$

Resultant is 13.42 N to the left and 63.43 below the horizontal

The Bearing = 206.57



$9063.08 \times 2 = 18126.16$

5)
b) c) d) e) f) g)

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3b) $\tan \theta = \frac{12}{6} = 63.43 = \text{angle below horizontal}$

$$180 + (90 - 63.43) = 206.57$$

$$\text{Bearing} = 206.57$$

$$6^2 + 12^2 = F^2 = 13.42 \text{ N}$$

Resultant is 13.42 N to the left and 63.43 below the horizontal

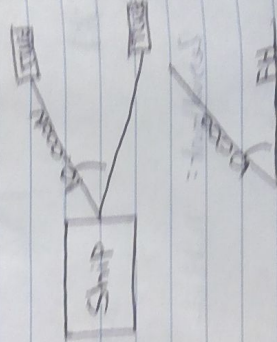
$$\text{The Bearing} = 206.57$$

4)

$$F_H = 10,000 \cos 25$$

$$F_H = 9063.08$$

$$9063.08 \times 2 = 18126.16$$



NUF

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FM

low

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5M

5)



and

6) A Positive to B negative

$$b) (0.5 \times 3) + (1 \div 2 \times 1 \div 6) = 4.167 \Omega$$

$$c) 12 \div 4.167 = 2.88A$$

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

$$e) \text{ ~~12 - 8.64 = 3.36~~ } 12 - 8.64 = V3 = 0$$

$$V3 = -3.36$$

$$3.36 \div 2 = 1.68A$$

$$f) 3.36 \div 6 = 0.56A$$

g)

