

1)

a) m^2 b) m^3

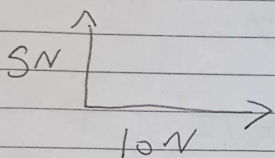
c) Kg

d) newtons

e) newtons

2) ~~kg~~³ kilograms per cubic meter

3)



a)

$$5^2 \times 10^2 = F^2$$

$$11.8N = F^2$$

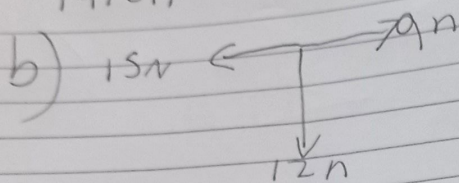
$$\tan \theta = \frac{5}{10}$$

$$\tan^{-1} \frac{5}{10} = 26.57^\circ$$

$$90 - 26.57 = 63.43$$

~~Resistant to the right and~~
~~26.57°~~

Resistant 11.8 newtons to the
 right 26.57° above the horizontal



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

$$\tan^{-1} \frac{12}{6} = 63.43$$

$$180 + 90 - 63.43$$

$$= 206.57$$

$$15^2 + 6^2 + 12^2 = F^2$$

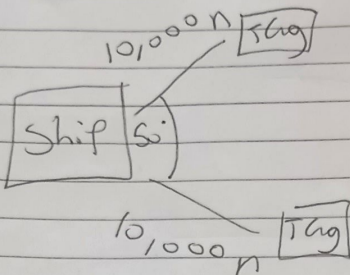
$$\sqrt{180} = 13.42n$$

~~Resultant~~ Resultant is 13.42n
to the left, 63.43 below
the horizontal, bearing is 206.57.

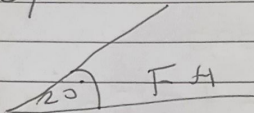
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4)

e)



10,000

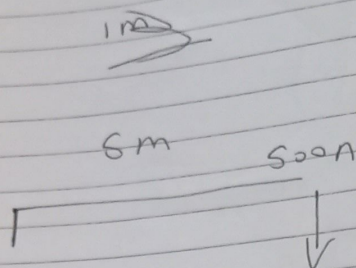


$$FH = 10,000 \cos 25$$

$$FH = 9063.08$$

$$9063.08 \times 2 = 18126.16$$

5)



$$500 \times 4 = 2000$$

$$2000 \div 1 = 2000 \text{ N}$$

6) a) A positive to b negative

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

$$c) 12 / 4.167 = 2.88 \text{ Amps}$$

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

$$e) \cancel{2.88} \times \frac{1}{2} = 1.44 \text{ V} \quad \frac{3.36}{2} = 1.68 \text{ A}$$

$$12 - 8.64 + 1.3 = 0 \quad \checkmark 3 - 5.36 \text{ V}$$

$$3.36 \div 6 = 0.56 \text{ A}$$

$$F) \quad \cancel{2.88} \times 0.167 = \cancel{0.48} \text{ V}$$

G) R1 transfers most amount of energy as it is least resistor in going from A so the most energy transfers past it.

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