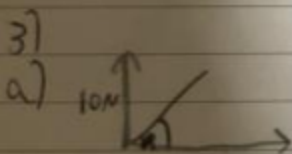


Science Exam

Pg1

- 1)
 a) kg
 b) N
 c) $\text{kg} \times \text{m/s}^2$
 d) m/s^2
 e) $\frac{\text{m/s}}{\text{s}}$

2) $\frac{\text{N}}{\text{m}^2}$



$$\Sigma F^2 = 10^2 + 20^2$$

$$10^2 + 20^2 = 100 + 400$$

$$\Sigma F^2 = 500$$

$$F = \sqrt{500}$$

$$F = 22.36 \text{ N}$$

$$\tan \theta = \frac{20}{10}$$

$$\theta = \tan^{-1} 2$$

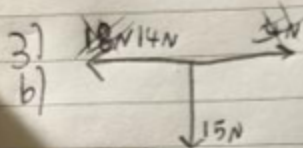
$$\theta = 63.43^\circ$$

$$180 + (90 - 63.43^\circ) = \text{Bearing } 206.57^\circ$$

$\therefore R$ is 22.36 N to the right, 63.43° above the horizontal

Science Exam

Pg2



$$\Sigma F^2 = 14^2 + 15^2$$

$$\Sigma F^2 = 421$$

$$F = \sqrt{421}$$

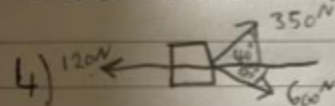
$$F = 20.52 \text{ N}$$

$$\tan \theta = \frac{14}{15}$$

$$\theta = \tan^{-1}$$

$$\theta = 43.03^\circ$$

$180 + (90 - 43.03^\circ) = \text{Bearing } 226.97^\circ$
 $\therefore$ is 20.52 N to the left, 43.03° below the horizontal



6)

a) Conventional Current flows from positive to negative, ~~in the direction of the electric field~~ through the circuit.

$$b) \frac{1}{R_T} = \frac{1}{3} + \frac{1}{4} + \frac{1}{5}$$

$$0.783 + 10 = 10.783$$

c) Γ

g) R1

