

Date: 03/03/04

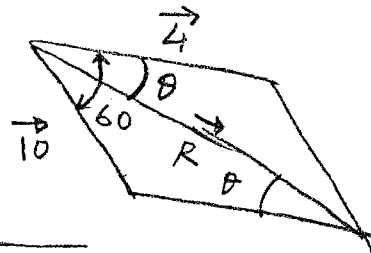
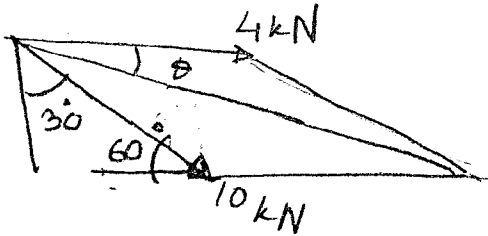
1.17

$$(b) 150 \text{ kN} = 150 \times 10^3 \text{ N}$$

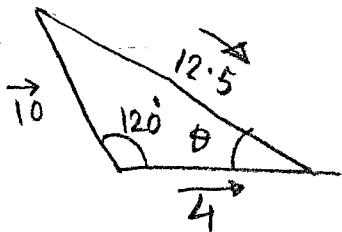
$$m = \frac{150 \times 10^3 \times \text{kg} \times \text{m/sec}^2}{9.8 \text{ m/sec}^2} = \underline{15.3 \times 10^3 \text{ kg}} \quad (\text{Ans.})$$

$$(c) 60 \text{ MN} = 60 \times 10^6 \text{ N}$$

$$m = \frac{60 \times 10^6 \times \text{kg} \times \text{m/sec}^2}{9.8 \text{ m/sec}^2} \\ = \underline{6.12 \times 10^6 \text{ kg}} \quad (\text{Ans.})$$



$$\vec{R} = \sqrt{(4)^2 + (10)^2 + 2 \cdot (4)(10) \cos 60^\circ} \\ = \underline{12.5 \text{ kN}}$$



$$\text{Here } \frac{10}{\sin \theta} = \frac{12.5}{\sin 120}$$

$$\Rightarrow \sin \theta = \frac{10 \sin 120}{12.5} = 0.69$$

$$\therefore \theta = \sin^{-1} 0.69 \\ = \underline{\underline{43.85^\circ}}$$