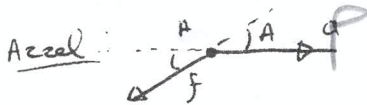


1986 [4]

MASS $4m$



FORCES:



N II



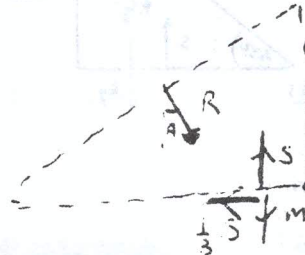
plane

plane

$$R - 4mg \cos A = -4m(p \sin A)$$

$$-4mg \sin A = 4m(p \cos A - f)$$

m



$$R \sin A - \frac{1}{3} S = mp$$

$$-R \cos A + S - mg = 0$$

Solve for p
So don't need

①

$$\begin{aligned} -4mg \sin A &= 4m(p \cos A - f) \quad (1) \\ R - 4mg \cos A &= -4m(p \sin A) \quad (2) \\ R \sin A - \frac{1}{3} S &= mp \quad (3) \\ -R \cos A + S - mg &= 0 \quad (4) \end{aligned}$$

$$(2) \Rightarrow R - 4mg \cos A = 4mp \sin A \quad (2')$$

$$R \sin A - \frac{1}{3} S = mp \quad (3)$$

$$S - R \cos A - mg = 0 \quad (4)$$

$$(3) \times 3 \Rightarrow 3R \sin A - S = 3mp$$

$$S - R \cos A - mg = 0$$

$$3R \sin A - R \cos A - mg = 3mp \quad (5)$$

$$(5) \Rightarrow \frac{6R}{\sqrt{5}} - \frac{R}{\sqrt{5}} - mg = 3mp$$

$$(2) \Rightarrow R - \frac{4mg}{\sqrt{5}} = \frac{8mp}{\sqrt{5}} \Rightarrow R = \frac{4mg}{\sqrt{5}} + \frac{8mp}{\sqrt{5}}$$

$$\therefore (5) \Rightarrow \frac{5}{\sqrt{5}} \left[\frac{4mg}{\sqrt{5}} + \frac{8mp}{\sqrt{5}} \right] - mg = 3mp$$

$$\Rightarrow 4g + 8p - g = 3p$$

$$\Rightarrow p = \frac{3}{11} g \cdot m s^{-2}$$