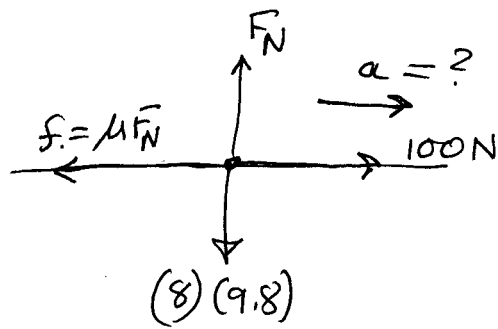


7.19



$$\sum F_y = 0$$

$$F_N - 8(9.8) = 0$$

$$F_N = 8(9.8) = 78.4 \text{ N}$$

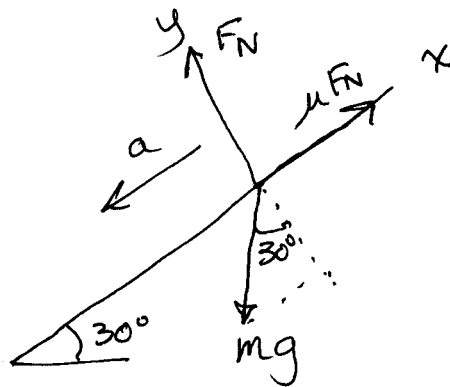
$$\sum F_x = ma$$

$$100 - \mu F_N = 8a$$

$$100 - (0.2)(78.4) = 8a$$

$$\boxed{a = 10.5 \text{ m/s}^2}$$

7.21



$$\sum F_y = 0$$

$$F_N - mg \cos 30^\circ = 0$$

$$F_N = mg \cos 30^\circ$$

$$\sum F_x = ma$$

$$mg \sin 30^\circ - \mu F_N = ma$$

$$mg \sin 30^\circ - 0.2(mg \cos 30^\circ) = ma$$

$$a = g(\sin 30^\circ - 0.2 \cos 30^\circ)$$

$$= 9.8(\sin 30^\circ - 0.2 \cos 30^\circ)$$

$$\boxed{a = 3.20 \text{ m/s}^2}$$