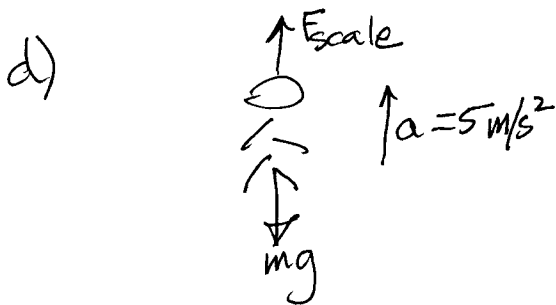


Newton's Laws Problems

4. a) The scale reads the magnitude of the force exerted on it or, equivalently, the force it exerts.

b) The scale reads the man's weight
 $= mg = (60)(10) = 600\text{ N}$.

c) same as (b).

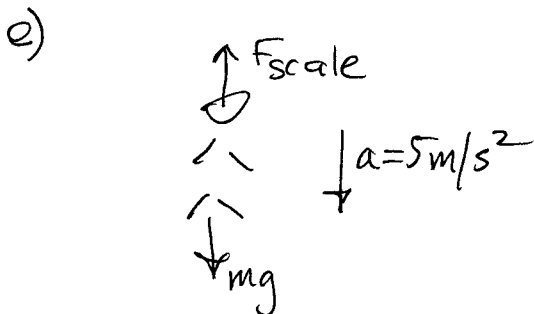


$$+\uparrow \Sigma F = ma$$

$$F_{\text{scale}} - mg = ma$$

$$F_{\text{scale}} - (60)(10) = 60(5)$$

$$F_{\text{scale}} = 300 + 600$$
$$= \boxed{900\text{ N}}$$

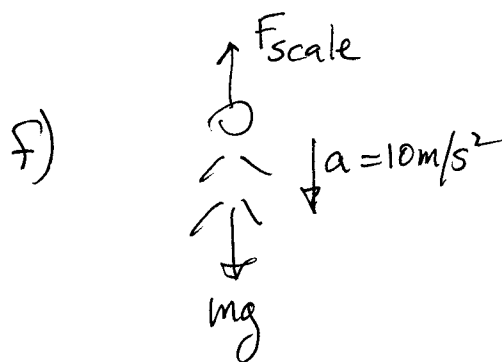


$$\downarrow + \Sigma F = ma$$

$$mg - F_{\text{scale}} = ma$$

$$(60)(10) - F_{\text{scale}} = 60(5)$$

$$F_{\text{scale}} = 600 - 300$$
$$= \boxed{300\text{ N}}$$



$$\downarrow + \Sigma F = ma$$

$$mg - F_{\text{scale}} = ma$$

$$60(10) - F_{\text{scale}} = (60)(10)$$

$$\boxed{F_{\text{scale}} = 0}$$

(apparent weightlessness)