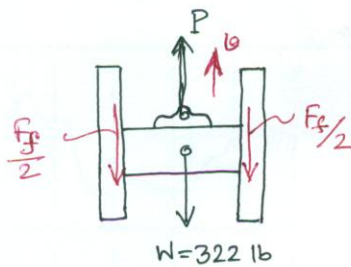


1110/P.325



Initially at rest

$$s = 30 \text{ ft}$$

$$a = \text{const.}$$

$$P = ?$$

$$t = 2.5 \text{ s}$$

$$F_f = 200 \text{ lb}$$

Solⁿ

$$s = \frac{1}{2} a t^2$$

$$\therefore a = \frac{2s}{t^2} = \frac{2 \times 30}{2.5^2} = 9.6 \text{ fps}^2$$

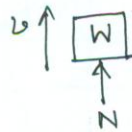
$$\Sigma F_y = ma \uparrow +ve$$

$$\Rightarrow P - W - F_f = \frac{W}{g} \cdot a$$

$$\Rightarrow P - 322 - 200 = \frac{322}{32.2} \times 9.6$$

$$\therefore P = \boxed{618 \text{ lb}} \text{ Ans.}$$

1111/P.326



$$W = 100 \text{ lb}$$

$$a = 3 \text{ fps}^2$$

Load supported by the man = ?

Solⁿ Load supported = Reaction on the shoulder = N

$$\text{Taking } \Sigma F_y = ma \uparrow +ve$$

$$N - W = \frac{W}{g} \cdot a$$

$$\Rightarrow N - 100 = \frac{100}{32.2} \times 3$$

$$\therefore N = \boxed{109.32 \text{ lb}} \text{ Ans.}$$