

⑤ $m = 450 \text{ kg}$

A) $h = 2.5 \text{ m}$

ground resist: $2.0 \times 10^5 \text{ N} = 200000 \text{ N}$

$W = F \cdot d = 450 \times 9.8 \times 2.5 = 11025 \text{ Nm/s}$

~~$F = MA = 450 \times$~~

$d = \frac{W}{F}$ ground $= \frac{W}{d}$

$\frac{W}{g} = d$

0.055 m
 $\frac{0.055 \text{ m}}{0.06 \text{ m}}$

B)

$50 \times 7.5 = 375 \text{ m total}$
 $\frac{375 \text{ m total}}{0.06 \text{ m}} = 6250 \text{ strokes}$

$mgh = F \cdot d$

⑥ of T is the P ↓

7) A) $W = F \cdot d = \Delta E$

$v_i = 0$
 $v_f = 10 \text{ m/s}$

$W = \frac{1}{2} (1000)(10^2)$

25000 J
 25000

B) $P = 2500 \text{ W}$

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8) $W = mgh$

$W = \Delta E = \frac{1}{2} (9000)(7.7^2) + (9000 \times 9.8 \times 2.5)$
 $= 2592000 \text{ J}$

$t = v_i = 0$
 $v_f =$
 $t = ?$
 $d =$

$d = \frac{1}{2} at^2$ $\sqrt{\frac{2d}{a}} = t = 7.77 \text{ seconds}$

$v_f = 1 \times 7.77 = 7.77 \text{ m/s}$

$$q) p = \frac{18000 \times 9.8 \times 27}{35} = 136080.5$$

$$(b) W = \Delta E$$

$$900 \text{ hp} = 372000 \text{ W}$$

$$V_f = 2$$

$$V_f = ?$$

$$a = ?$$

$$t = 1.5 \text{ sec}$$

$$d = 46$$

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

$$a = \frac{2d}{t^2} = \frac{820}{1.5^2}$$

$$a = 67 \text{ m/s}^2$$

$$F_{\text{net}} = MA = 170 \times 67 = 10810.66 \text{ N} \times 46 =$$

$$444877.267 \text{ N}$$