

05.

$$T = Fr$$

$$r = \frac{T}{F}$$

$$= \frac{190.50 \text{ lb ft}}{40.50 \text{ lb}}$$

$$4.21 \text{ ft}$$

04

$$W = fd'$$

$$161 \times 15$$

Work done for one block is

$$2415 \text{ lb ft}$$

Number of blocks in 20 min

$$20 \times 2 = 40 \text{ blocks}$$

Total work done

$$2415 \times 40$$

$$96600 \text{ lb ft}$$

$$1 \text{ Work done} = Fd$$

$$43 \times 993.5$$

$$= 41860.5 \text{ J}$$

$$2 \text{ Work done at an angle}$$

$$W = Fd \cos \theta$$

$$11428 \times 396.5 \times \cos 20^\circ$$

$$4043160.94 \text{ J}$$

$$3 \text{ } T = Fr$$

$$16.50 \times 6$$

$$9.9 \text{ lb inches}$$

410

$$1 \text{ ft}^3 = 62.4 \text{ lb}$$

$$\frac{1000000}{62.4}$$

$$62.4$$

$$=$$

$$16025.64 \text{ lb}$$

$$PE = mgh$$

$$= Fh$$

$$= 16025.64 \times 755.50$$

$$12107371.79 \text{ lb ft}$$

$$9. \text{ } Ke = \frac{1}{2} mv^2$$

$$9.97 \text{ m/s}$$

$$v^2 = \frac{2 Ke}{m}$$

$$v = \sqrt{\frac{2 \times 1666.50}{33.5}}$$

$$5) \text{ } MA = \frac{F_o}{F_i} = \frac{\text{output distance}}{\text{input distance}}$$

$$\frac{4.00 \text{ m}}{11.50 \text{ m}}$$

$$= 0.3478$$

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$$17 \text{ } P = \frac{W}{t} = \frac{Fd}{t}$$

$$= \frac{963 \times 31}{19}$$

$$1571.21 \text{ Watt}$$

$$1.571 \text{ Kilowatt}$$

06.

$$MA = \frac{FR}{FE} = \frac{SE}{SR}$$

$$FRSR = FESE$$

$$FE = \frac{FRSR}{SE}$$

$$= \frac{167.5 \times 3}{4.715}$$

$$= 106.57 \text{ kg}$$

$$W = mg$$

$$106.57 \times 9.8$$

$$= 1044.43 \text{ N}$$