

Green text

- p 266 (41)
- p 270 (44 a, 46)
- p 277 (37 a ; b)
- p 287 (1,2,3,4,6,7)

- 41. 153 W
- 44. a) 75.5%
- 46. 19%
- 37 a)  $2.70 \times 10^5 \text{ J}$
- b)  $2.0 \times 10^6 \text{ J}$
- 1. 13 m/s
- 2. 7.7 m
- 3. 4.8 m
- 4. 5.1 m
- 6.  $610 \text{ J}$   $13 \text{ J}$
- 22 m/s    22 m/s
- 7. 10 m

p 308 (18,19,20 ; 24)

Quiz #2 & #3  
Next Wednesday April 30

- 18. 11 m/s
- 19. 14.3 m/s
- 20.  $7.40 \times 10^2 \text{ J}$
- 24. 75 N

Monday April 29

p 308

- 18. 11 m/s
- 19. 14.3 m/s
- 20. 740 J
- 24. 75 N

p 277

- 36.  $3.5 \times 10^2$  W
- 37(c)  $4 \times 10^6$  J

p 270

- 45. 25 s<sup>-1</sup>
- 48. 87.2 %

p 329

- 22. 30 m/s
- 23. 1.3 m/s

p 277

$$36. \text{ power} = \frac{\text{work}}{\text{time}} = \frac{7.0 \times 10^2 \text{ J}}{2.0 \text{ sec}}$$

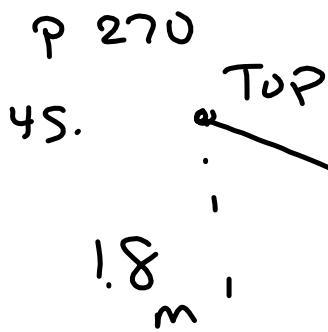
$$P = 3.5 \times 10^2 \text{ W}$$

$$37(c) \quad \begin{array}{l} 2000 \text{ W} \\ 2000 \text{ J/s} \end{array}$$

$$2000 \text{ J/s} \times 30 \text{ min} \times 60 \frac{\text{sec}}{\text{min}}$$

$$3\,600\,000 \text{ J}$$

$$\text{Energy} = 4 \times 10^6 \text{ J}$$



$$eff = \frac{221}{865} \times 100\%$$

$eff = 25.5\%$

Top

$$PE = mgh$$

$$= 49(9.81)(1.80)$$

$$= 865 \text{ J}$$

$$KE = 0 \text{ J}$$


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$$TE = 865 \text{ J}$$

Bottom

$$PE = mgh$$

$$= 0 \text{ J}$$

$$KE = \frac{1}{2}(49) 3^2$$

$$= 221 \text{ J}$$


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$$TE = 221 \text{ J}$$

p 270

$$48. \text{ eff} = \frac{E_o}{E_i} \times 100\%$$

$$= \frac{301 \text{ J}}{345 \text{ J}} \times 100\%$$

$$\text{eff} = 87.2\%$$

p 329

22.

Point 1

$$KE = 0 \text{ J}$$

$$PE = mgh$$

$$= m(9.81)(70)$$

$$= 687 \text{ m}$$

$$\underline{TE = 687 \text{ m}}$$

Point 2

$$PE_2 = 294 \text{ m}$$

$$KE_2 = \frac{1}{2} m v^2$$

$$\underline{TE = 294 \text{ m} + \frac{1}{2} m v^2}$$

$$687 \text{ m} = 294 \text{ m} + \frac{1}{2} m v^2$$

$$687 = 294 + \frac{1}{2} v^2$$

$$\boxed{30 \text{ m/s} = v_2}$$

23.

$$\begin{aligned} PE_{\text{Top}} &= mgh \\ &= m(9.81)(0.085) \end{aligned}$$

$$KE_{\text{Bottom}} = \frac{1}{2} m v^2$$

$$0.83385 \text{ m} = \frac{1}{2} m v^2$$

$$0.83385 = \frac{1}{2} v^2$$

$$1.3 \text{ m/s} = v$$