

Chapter Six Answers:

1. $KE = \frac{1}{2} mv^2$
 $KE = \frac{1}{2} (1500\text{kg}) (25 \text{ m/s})^2$
 $KE = 468,750 \text{ J}$
 $W = 468,750 \text{ J}$
2. $PE = mgh$
 $W = mg \cdot \text{change in height}$
 $W = (40\text{kg}) (9.8\text{m/s}^2) (20\text{m})$
 $W = 7840 \text{ J}$
3. $W = Fd$
 $W = 150(10)$
 $W = 1500 \text{ J}$
4. **A:** $W = (20\text{kg}) (9.8 \text{ m/s}^2) (200\text{m})$
 $W = 39,200$
B: $5 \text{ min} / 1 \cdot 60\text{s} / 1 \text{ min} = 300 \text{ s}$
 $P = W/T = 39,200 \text{ J} / 300\text{s} = \underline{130.7 \text{ W}}$
5. **A:** $W = FD$
 $W = (70\text{N}) (200\text{M})$
 $W = 14,000 \text{ J}$
B: $KE = W$
 $KE = 14000 \text{ J}$
6. **A:** $W = \frac{1}{2} (1500 \text{ kg}) (40^2 - 15^2)$
 $W = 750 (1600 - 225)$
 $W = 750 (1375) = \underline{1,031,250 \text{ J}}$
B: $1,031,250 \text{ J} / 275\text{m}$
 $F = 3,750 \text{ N}$