

PHY2004

ASSIGNED PROBLEMS

Answers for even numbered assigned problems

(Answers for odd numbers are in the textbook.)

Chapter 1.

22. (a) 10.3 m (b) -17.1 m (c) -4.59 m

24. $s = 92.2 \text{ m}$, $\theta = 229.4$

Chapter 2

30. $a = 7.35 \cdot 10^4 \text{ m/s}^2$ $t = 6.8 \cdot 10^{-4} \text{ s}$

32. (a) $a = 0.133 \text{ m/s}^2$ (b) $a = 0$ (c) $x = 60 \text{ m}$ (d) 150 m

44. $v = 34.8 \text{ m/s}$ $t = 6.1 \text{ s}$

50. $t = 2.47 \text{ s}$ $v = 20.2 \text{ m/s}$

Chapter 3

2. (a) 7840 n (b) $m = 5102 \text{ kg}$

10. (a) 5 kg (b) 19.5 N

18. 78 N

22. 332 N

30. 13.2 N

36. $1.98 \cdot 10^{20} \text{ N}$

Chapter 4.

4. (a) 84.8 N, (b) 34.8 N, (c) 109.8 N, (d) 84.8 N, (e) 67.8 N

14. $\mu(\text{static}) = 0.366$, $\mu(\text{kinetic}) = 0.257$

Chapter 5.

2. (a) 12 J (b) 14.7 J (c) 58.8 N (d) -35.3 J (e) 0

12. (a) 137,200 J (b) 0 (c) -137,200 J

16. (a) 1000 J (b) 1.29 m (c) 881.8 J (d) 9.1 N

36. 3.33 N

Chapter 6.

2. efficiency=69.44%

18. $F=2250\text{ N}$, 20. Efficiency= 0.48, 22. $F_1=131.8\text{ N}$.

Chapter 7.

2. (a) $P= 8.33\text{ kg m/s}$, (b) $N=50\text{ ft/s}$, (c) $p= 9291.9\text{ kg m/s}$; 26. $V_{2f} = 1.083\text{ m/s}$; 30. $V_{af} = -2\text{ m/s}$

Chapter 8.

20. (a) 120 N m , (b) 60 N m , (c) 0, (d) 30 Nm (down) 26. 175 N .

Chapter 9.

8. $7.27 \cdot 10^{-5}\text{ rad/s}$; 16. (a) 2.667 rad/s , (b) 1.499 s (c) 5.308 rev ; 22. 353.8 s , 30. 15.33 m/s