

PHYSICS BASICS, MOVEMENT, and VECTORS

Chapter 1-3 Assignments and Answers

Assignments:

Ch. 1&2 Start-Up Assignment:

HW due: _____

Read and take notes on textbook Sections 1.1-1.3, 1.4-1.7, 2.1-2.4

Note: The startup textbook reading assignment always includes, though not explicitly stated, any chapter text prior to the beginning of section 1 of that chapter (e.g. page 1)

Work textbook pg. 16-18 Problems #12, 13, 16, 18, 24, 25, 29, 49

Work textbook pg. 39-40 Problems #2, 3, 8, 9, 17a, 19

Ch. 2 During-Chapter Assignment:

HW due: _____

Work textbook pg. 39-41 Problems

#11-13, 15, 22-24, 30, 33, 36, 39, 42, 47, 49-51, 56

Ch. 3 During-Chapter Assignment:

HW due: _____

Work textbook pg. 66-67 Problems

#1 (but change "SW" to "S"), 2, 4, 6, 8-10, 17-19, 21-23, 26, 31, 35

Answers:

Ch. 1&2 Start-Up Assignment

12.a. 0.2866 m

b. 0.000085 V

c. 0.000760 kg

d. 0.0000000000600 s

e. 0.000000000000225 m

f. 2,500,000,000 V

13.a. 1 MV

b. 2 μm

c. 6 kilodays

d. 18 hectobucks

e. 8 nanopieces

16.a. 0.111 yd^2

b. 10.8 ft^2

18.a. 3.9E^{-9} in

b. 1.0E^8 atoms

24.a. 10^3

b. 10^4

c. 10^{-2}

d. 10^9

25. approx. 7E^5 books

29. 8E^4 cm^3

49. 210 yd = 190 m

Ch. 1&2 Start-Up (cont.)

2. 0.60h (or 36 min)
3. 61m
8. 322m/s
- 9.a. 4.3m/s

Ch. 2 During-Chap Assignment

11. 2.7min
12. 30.46s
13. 6.752h, 873.8km/h
15. 6.73m/s
22. -3.1m/s^2
23. 181.5m
24. 4.408m/s^2
30. $\Delta x_{\text{passing}} = 264\text{m}$, $\Delta x_{\text{approach}} = 224\text{m}$, so
NO the car should not pass.
33. 51.8m
- 36.a. 24.7m
b. 4.49s
39. 5.61s
- 42.a. 10.4m/s
b. 2.90s and 0.775s
- 47.a. 5.20s
b. 38.9m/s
c. 84.7m
- 49.a. 48s
b. from 90s to 108s
c. from 0s to 38s, 65s to 83s, and
90s to 108s
d. from 65s to 83s
- 50.a. 0.30m/s
b. 1.4m/s
c. 0.30m/s
d. 1.4m/s
e. -0.95m/s
- 51.a. from 0s to 18s
b. 27s
c. 38s
d. It moves in both directions.
- 56.a. Moving in neg direction.
b. Speeding up.
c. Accel is negative.

- b. 0m/s
- 17.a. 7.41m/s^2
19. $-5.5\text{m/s}^2 = -0.56\text{g's}$

- d. Moving in pos direction.
- e. Speeding up.
- f. Accel is positive.
- g. It's not moving at all.
Velocity and Accel are both 0.

Ch. 3 During-Chap Assignment

1. 231.2 km @ 21.6° S of W
2. 10.2 blocks @ 11.3° N of E
4. 10.0 units @ 47° below pos. x-axis.
6. (11.9, -11.8, -4.4), length = 17.3
- 8.a. $x_1 = -6.6$ units, $y_1 = 0$ units,
 $x_2 = 6.0$ units, $y_2 = 6.0$ units
b. 6.0 units @ 84° above neg. x-axis
- 9.a. 550km/h, 487km/h
b. 1650km, 1460km
- 10.a. 24.0, 11.6
b. $26.7, 25.8^\circ$
17. 4.03m
18. 5.4m, -44.1m
19. 12.52° and 77.48°
21. 7.92m/s
22. 2.11s
23. 12.89m
- 26.a. 0.851m
b. 0.65°
- 31.a. 10.43s
b. 541.4m
c. 51.91m/s , -63.10m/s
d. 81.71m/s
e. 50.56° below horizontal
f. 78.07m
- 35.a. 480.61m
b. 8.37m/s downward
c. 97.43m/s