

FLUIDS!

Assigned Reading, Problems, and Answers

ASSIGNMENTS:

Ch. 10 Problem Assignment Pt. 1:

HW due: _____

Work textbook pg. 281-282 Problems

#1, 2, 5, 7, 9, 10, 11, 12, 14, 17a, 18, 20, 22, 23, 24, 25, 27, 28, 29, 33, 34

Ch. 10 Problem Assignment Pt. 2:

HW due: _____

Work textbook pg. 282-283 Problems

#35, 36, 38, 39, 41, 42, 43, 44, 45, 46, 49a, 63a, 68, 77

ANSWERS:

Ch. 10 Assignment Pt. 1:

1. $2.7E^{11}$ kg

2. 65.9 kg

5. 0.8477

7.a. $7.35E^7$ Pa

b. $1.84E^5$ Pa

9.a. $4.7E^5$ N

b. $4.7E^5$ N

10. 1.154m

11. 2155kg

12. 10,820 kg

14.a. $1.21E^5$ Pa, $2.26E^7$ N

b. $1.21E^5$ Pa

17.a. $9.63E^5$ Pa

18. $3.724E^5$ Pa

20.a. 339g

b. 16,293N

22. 2994 kg/m^3

23. 19.9%

24.a. $1.538E^5$ N

b. $1.764E^5$ N

25. 920kg

27. Iron or steel ($\rho \approx 7840 \text{ kg}$)

28. 2.001kg

29.a. $7.395E^5$ N

b. 10,410N

33. 10.5%

34. 5.76kg

Ch. 10 Assignment Pt. 2:

35. 90.5cm/s

36. 3.1m/s

38. 9.5m/s

39. $4.429E^5$ s (approx 5.1 days)

41. $5.61E^{-3}$ m³/s

42. $4.61E^{-3}$ m³/s

43. $1.896E^5$ N

44. $2.269E^6$ N

45. $9.68E^4$ Pa (or 0.96 atm)

46. 2.219m/s, $2.063E^5$ Pa

49.a. $2\sqrt{(h_2 - h_1)h_1}$

63.a. 75cm

68.a. $6.7E^{-4}$ m²

b. $1.14E^3$ J

c. $3.419E^{-3}$ m

d. 35 strokes

e. $W_{\text{input}} = 1.14E^3$ J, so E is conserved.

77. 333.3g