

Unit IX Answers

Pg 422

8. 0.57 atm 9. 610.5 Pa 10. 1.3×10^{-3} Pa

Pg 432

5. 31.0 ml 6. 0.894 L 7. 114 kPa 8. 323 K 9. 5.00 L

10. No. The volume cannot be negative. The temperatures must be changed to Kelvin.

Pg 442

7. 0.781 mol 8. 1.1×10^3 kPa 9. 5.3×10^{-3} mole SO_2

11. 15.0 L 12. 21.2 L

Pgs 445-450

31. 101 325 newtons 32. 13.3 kPa 33. 290 kPa 34. 92.5 kPa 35. 113 mL

36. 175 kPa 37. 1100 mL 38. 4.00×10^8 L 39. 66.3 mL 40. 7.4×10^7 L

41. 93.3 mL 42. 2.18 L 43. 0.540 L 44. 37 °C 45. 3.1 L

46. 67 °C 47. 152 kPa 48. 0.360 atm 49. 26 kPa 50. 43 psi

51. 8.4 atm 52. 75°C 53. 0.781 mole 54. 0.0486 mole 55. 266 kPa

56. 2.5 mole 57. 4.0×10^3 L 58. 62.4 L

63. 10.4 L 64. 0.484 g Mg 65. 3.56×10^{-2} g C_8H_{18}

66. a) CO b) 37.5 mL CO c) 412.5 mL CH_3OH

67. 2.28×10^3 L 68. 2.64 L 69. 1.80 g CO_2 , 1.80 g/L CO_2 , 1.31 g/L O_2

70. Mercury is under higher pressure. The density of mercury is about 13.6 times that of water so it takes about 13.6 times as much pressure to be at the same level as the water.

71. 8.1×10^3 g LiOH 72. 0.179 g/L 73. 5.71 g/L 74. 10.3 meters

75. 171 kPa 76. 0.659 atm 77. 12.5 g O_2 78. 134 kPa 79. 2.64 L H_2

80. The average kinetic energy of the molecules of a gas is proportional to the absolute temperature. Increased temperature increases the kinetic energy and also the pressure.

81. 167 °C 82. 194 °C 83. 44 g He