

Name: _____

Mr. Croom's Physics

Date: _____

Chapter 4: Force and the Law of Motion

7. A car tire is inflated to 220 kPa. If each tire is in contact with the 100cm^2 of the road. What is the mass of the car and its occupants?
8. (Walker, Chapter 15) The deepest point of the Pacific Ocean is 11,033 m, in the Mariana Trench. What is the water pressure at that point? The density of seawater is 1025 kg/m^3 .
9. (Walker, p. 493, #3) Two drinking glasses, A and B, are filled with water to the same depth. Glass A has twice the diameter of glass B. (a) Compare the weight of water in the two glasses. (b) Compare the pressure at the bottom of the two glasses. (c) Are your answers to parts (a) and (b) consistent? Explain.
10. (Walker, p. 495, #8) A 67-kg person sits on a 3.5-kg chair. Each leg of the chair makes contact with the floor in a circle that is 1.5 cm in diameter. Find the pressure exerted on the floor by each leg of the chair, assuming the weight is evenly distributed.
11. (Walker, p. 495, #9) To prevent damage to floors (and to increase friction), a crutch will often have a rubber tip attached to its end. If the end of the crutch is a circle of radius 1.2 cm without the tip, and the tip is a circle of radius 2.5 cm, by what factor does the tip reduce the pressure exerted by the crutch?