

Chapter 9 Homework 2

29) $d = .25\text{m}$
 $m = .54\text{kg}$

A) $F_B = \rho V g$
 $F_B = 1000 \left(\frac{4}{3} \pi (.125)^3 \right) (10)$
 $F_B = 81.81\text{N}$

② $\sum F_y = 0 = W + F_B + F$
 $0 = -5.4 + 81.81 + F$
 $F = -76.41\text{N}$

41) $W_{\text{air}} = 300\text{N}$
 $W_A = 200\text{N}$
 $\rho_A = 700\text{kg/m}^3$

A) $F_B = W_{\text{air}} - W_A$
 $F_B = 300 - 200$
 $F_B = 100\text{N}$

$F_B = \rho V g$
 $100 = 700(V)(10)$
 $V = 0.0143\text{m}^3$