

## U.06d Hydraulics Review Worksheet

NAME: \_\_\_\_\_

Remember that  $P_1 = P_2$  and that  $P = F/A$ , where  $P$  stands for pressure,  $F$  stands for Force, and  $A$  stands for the surface area of the piston. The mechanical advantage of a hydraulic system is equal to  $F_2 / F_1$ .

1. The input piston has a cross-sectional area of 21 square centimeters and pushes with a force of 38 newtons. The far end of the hydraulic pipe connects to a second piston (output piston) with a cross-sectional surface area of 100 square centimeters. What is the force on the second piston?

2. Use algebra and the formulae at the top of this page to answer this question: In a hydraulic system with a mechanical advantage of 34, if you need 100 pounds of output force, how much force must you input?