

L. N. Coakley Science Department
Pressure in Solids and Liquids Worksheet.

Name: _____ Date: _____ Grade _____.

1. In a hydraulic jack a force of 20 N is applied to a piston of area 0.20 m². The area of the other piston is 2.0 m². What is:
- What is the pressure transmitted through the liquid?
 - What is the force on the other piston?

Solution (a)

Known:

F =

A =

Unknown:

The pressure transmitted through the liquid is _____ Pa.

Formula:

Substitution:

Solution (b)

Known:

P =

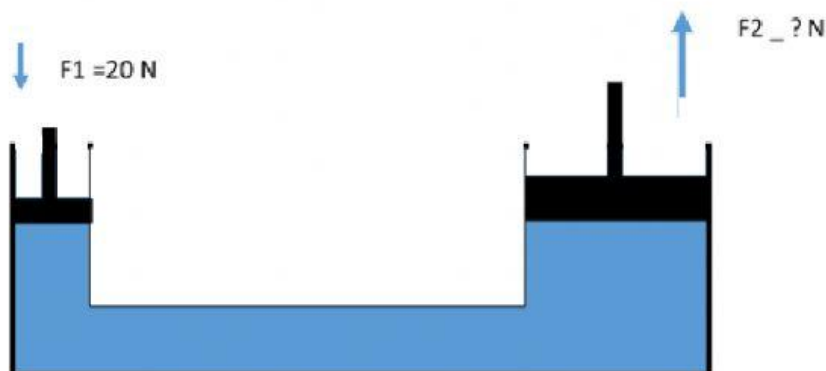
A =

Unknown:

The force on the other piston is _____ N.

Formula:

Substitution:



2. In another similar system the area of the first and second piston is as is shown in the table below.

a) Calculate the pressure exerted on the piston 2 if the force applied to piston 1 was 100 N?

b) What is the force on the second piston?

	Area in piston 1 (m ²)	Area in piston 2 (m ²)
1	0.05	4.0
2	0.005	4.0
3	0.0005	4.0

Solution (1)

Known:

Formula:

Substitution:

F =

A =

Unknown:

The pressure transmitted through the liquid is _____ Pa.

Solution (1)

Known:

Formula:

Substitution:

P =

A =

Unknown:

The force on the other piston is _____ N.

Solution (2)

Known:

$F =$

$A =$

Unknown:

The pressure transmitted through the liquid is _____ Pa.

Formula:

Substitution:

Solution (2)

Known:

$P =$

$A =$

Unknown:

The force on the other piston is _____ N.

Formula:

Substitution:

Solution (3)

Known:

$F =$

$A =$

Unknown:

The pressure transmitted through the liquid is _____ Pa.

Formula:

Substitution:

Solution (3)

Known:

$P =$

$A =$

Unknown:

The force on the other piston is _____ N.

Formula:

Substitution:

3. Compare the forces at the second piston of each system and explain why that happens?
