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 are 0.20 m^2. The area of the other piston is 2.0 m^2. What is:
   a) What is the pressure transmitted through the liquid?
   b) What is the force on the other piston?

Solution (a)

Known: **Formula:** **Substitution:**

F =

A =

Unknown:

The pressure transmitted through the liquid is _____ Pa.

Solution (b)

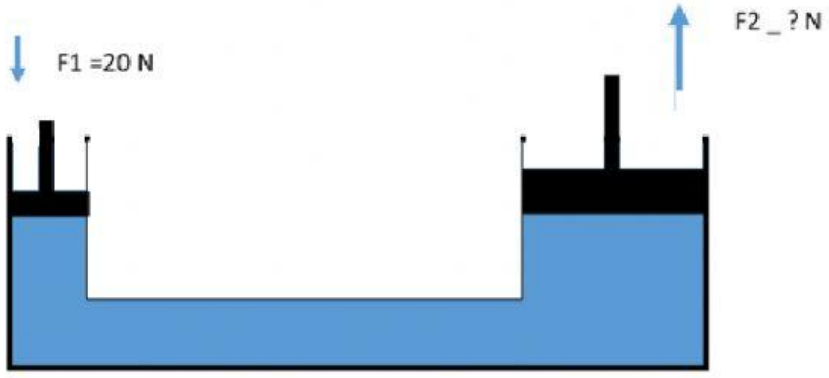
Known: **Formula:** **Substitution:**

P =

A =

Unknown:

The force on the other piston is _____ N.



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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 exert 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.

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Solution (2)

Known: **Formula:** **Substitution:**

F =

A =

Unknown:

The pressure transmitted through the liquid is _____ Pa.

Solution (2)

Known: **Formula:** **Substitution:**

P =

A =

Unknown:

The force on the other piston is _____ N.

Solution (3)

Known: **Formula:** **Substitution:**

F =

A =

Unknown:

The pressure transmitted through the liquid is _____ Pa.

Solution (3)

Known: **Formula:** **Substitution:**

P =

A =

Unknown:

The force on the other piston is _____ N.

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

_____

_____

_____ .

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