



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:

$$P =$$

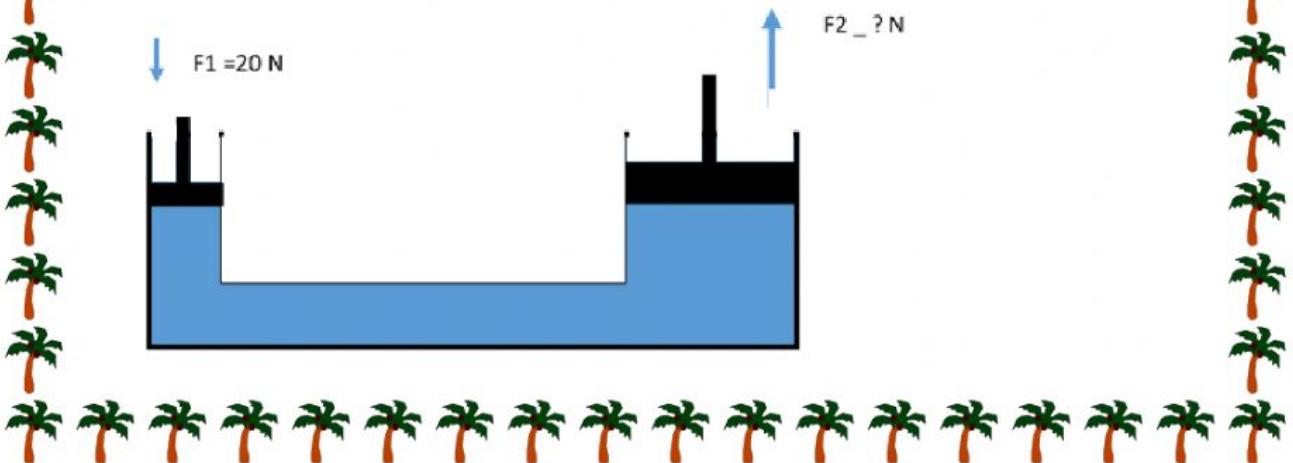
$$A =$$

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:

$$F =$$

$$A =$$

Unknown:

The pressure transmitted through the liquid is _____ Pa.

Formula:

Substitution:

Solution (1)

Known:

$$P =$$

$$A =$$

Unknown:

The force on the other piston is _____ N.

Formula:

Substitution:





Solution (2)

Known:

$$F =$$

$$A =$$

Unknown:

The pressure transmitted through the liquid is _____ Pa.

Formula:

Substitution:



Solution (2)

Known:

$$P =$$

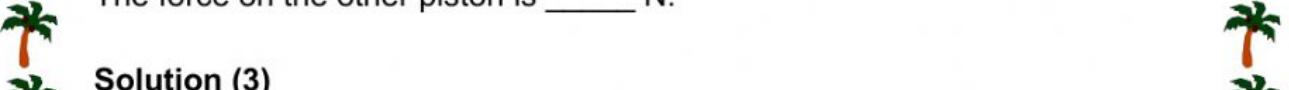
$$A =$$

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:

$$P =$$

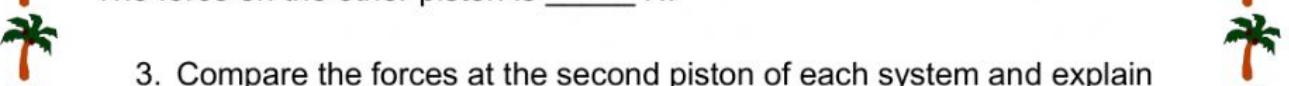
$$A =$$

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?

