L. N. Coakley Science Department

Pressure in Solids and Liquids Worksheet.

Name:_____ **Date:**_____ **Grade**_____.

1. How do we calculate pressure?
   a) Pressure = weight x area
   b) Pressure = mass / area
   c) Pressure = force / area

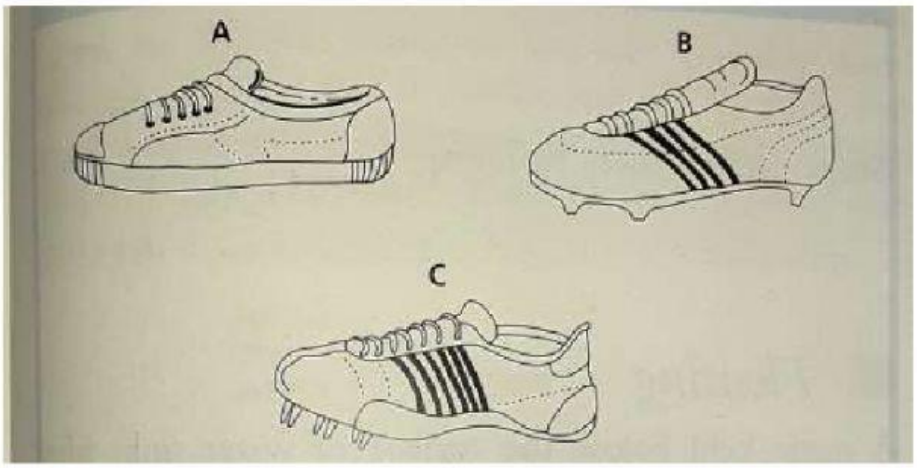
2. What is one Pascal equivalent to?
   a) 10 N/m^2
   b) 1 N/m^2
   c) 10 N/m^3

3. How can we increase pressure?
   a) Reducing surface area
   b) Increasing surface area
   c) Reducing force

4. Where is the pressure greatest in a liquid?
   a) At the bottom
   b) At the top
   c) In the middle

5. What exerts a greater pressure?
   a) More of a denser liquid
   b) More of a less dense liquid
   c) Less of a less dense liquid

6. A student investigated the grip of three types of sports shoe shown in the figure bellow.



a) Describe how the student can measure the area of contact between shoe A and the ground.

_____

_____

_____.

b) A girl is wearing a pair of shoes like A. she weighs 550 N. The area of contact for shoe A is 160 cm^2. Calculate the pressure exerted on the ground by the girl.

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

W =

A =

Unknown:

The pressure exerted by the girl is _____ Pa.

c) Explain why shoe C should not be worn in a gym.

_____

_____.

7. What is the pressure on a surface when a force of 50 N acts on an area of:

	Area m^2
1)	2.0
2)	100
3)	0.50 ?

Work out:

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

A =

F =

Unknown:

The pressure exerted on the surface 1 is _____ Pa.

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

A =

F =

Unknown:

The pressure exerted on the surface 2 is _____ Pa.

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

A =

F =

Unknown:

The pressure exerted on the surface 3 is _____ Pa.

8. A pressure of 10 Pa acts on an area of 3 m^2. What is the force acting on the area?

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

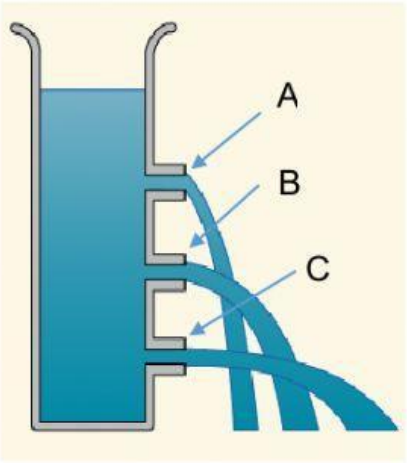
A =

P =

Unknown:

The force acting on the area is _____ N.

9. In the figure bellow water spurts out faster and furthest from the lowest hole. Explain why that happens?



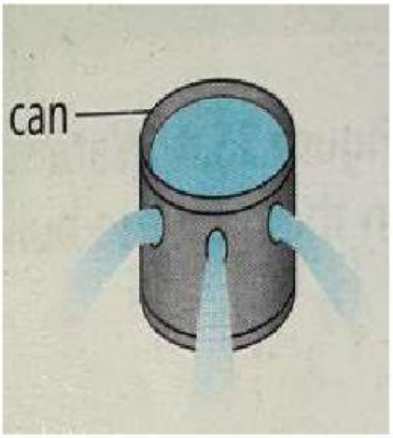
_____

_____

_____

_____

10. In the figure the can of water has similar holes all around at the same level. Why the water comes out equally fast and equally far from each hole?



_____

_____

_____

_____