# ANNEX 1

**TEST ABOUT PASCAL’S LAW**

Read, analyze and select the correct answer according to the statements:

**1) Select the correct answer:**

A system that works under Pascal's Law is made up of two pistons of different diameters, inside which a fluid is transmitted. There are systems that use water as fluid and other systems that use oil, obviously both have different densities. Will the force multiplication factor depend on the fluid used?

1. True
2. Probably true
3. More information required
4. Probably false
5. False

**2) Select the correct answer:**

Hydraulic car brakes are an application of Pascal's Law. A phenomenon that usually occurs is when air enters the duct that transmits the brake fluid. Will this cause the brakes to fail?

1. Assumption Made
2. Assumption No Made

**3) Select the correct answer:**

The hydraulic press needs a fluid to be able to push the piston and multiply the force. Gases are also considered fluids, but compressible, that is to say that their volume can be reduced when they are pressed or compressed, therefore:

1. In a hydraulic press, gases and liquids can be used as fluids.
2. In a hydraulic press, only gases can be used because they are understandable.
3. In a hydraulic press, only liquids can be used because they are incomprehensible.

**4) Select the correct answer:**

Liquids transmit pressure in all directions by means of the volume of the fluid transmitted, if within a hydraulic press system the volumes do not change, that is, the volume displaced by A1 is equal to the volume displaced by A2. Will the distances of the displacements of the pistons or pistons within the system be inversely proportional to the areas?

1. Correct conclusion
2. Wrong conclusion

**5) Select the correct answer:**

The cylinder shown in the figure is provided with a small piston with a surface area of Imagen que contiene firmar, calle, dibujo, tráfico

Descripción generada automáticamente10cm2 of surface and a large piston of 100cm2 of surface. Inside the cylinder there is a liquid that could be water. By applying a force of 10N on the small piston, to balance the force on the large piston we need to apply a force of 100N (1N per cm2). Therefore, the pressure produced by the small piston is equal to the pressure produced by the large piston, concluding that in Pascal system liquids transmit pressure and not force.

1. Strong Argument
2. Weak Argument

**6) Answer the following statement:**

You are asked to design a machine that works under Pascal's Law. What ideas would you propose for its construction?

1……………………………………………………………………………………………………

2……………………………………………………………………………………………………

3……………………………………………………………………………………………………

4……………………………………………………………………………………………………

5……………………………………………………………………………………………………

6……………………………………………………………………………………………………

**7) Answer the following statement:**

Interfaz de usuario gráfica, Aplicación, PowerPoint

Descripción generada automáticamenteWhat is the relationship between a hydraulic system and the image shown?

**………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………**

**Analyze and solve the problem posed, then select the correct answer:**

In mechanics, Pascal's Law has many applications, one of which is the Hydraulic Press used in car lifts. If we have one of these mechanisms whose pistons are 10cm2 and 4200cm2 respectively, a force of 500N is applied to the smaller one.

8) What would be the maximum weight that the larger piston could lift?

1. 1,2N
2. 210000N
3. 2100000N
4. 5000N

9) What would be the weight that the larger piston can lift, if the performance of the smaller piston is 85%?

1. 1785000N
2. 1,01N
3. 4250N
4. 175800N

10) What would be the force multiplying factor of the mechanism initially?

1. F1=420F2
2. F1=0,00238F2
3. F1=0,0024F2
4. F1=4200F2