**The National Orthodox School /Shmaisani**

**Subject: Science/ Physics**

**Name: Title: Pressure Homework**

**Date: Grade-Section: 9IB**

1. A block of weight 1200N has a length of 0.2 m and a width of 0.4 m and a height of 0.3 m.
2. Find the smallest pressure that this block exerts on the ground.

1200/0.024=50000 pa

50 Kpa

1. Find the largest pressure that this block exerts on the ground.

50 Kpa

1. The force applied to a 0.25 cm by 0.75 cm brake pad produces a pressure of 500 N/cm². Calculate the force applied to the brake pad.

P=f/a

500=f/0.1875

500\*0.1875=93.75

F=93.75

1. A swimming pool contains water with a density of $10^{3}kg/m^{3}$. Calculate the pressure due to the water at a depth of 2.5 m. Ignore the effect of the atmosphere.

P=density\*gravity\*h

P=1000\*9.81\*2.5

P=24,525 pa

P=25 Kpa

1. A swimming pool contains olive oil with a density of $895 kg/m^{3}$. Calculate the pressure due to the oil at a depth of 1.75 m. Ignore the effect of the atmosphere.

P=density\*gravity\*h

P=895\*1.75\*9.81

P=15,364 pa

=15 Kpa

1. A swimming pool contains water with a density of $10^{3}kg/m^{3}$. Calculate the height that a pressure due to the water at of $1.5×10^{4}Pa$ takes place. Ignore the effect of the atmosphere.

P=density\*gravity\*h

15000=1000\*9.81\*height

Height=1.53 meters

1. A man of mass 80 kg is standing on the beach, knowing that the area of his foot is 8 cm2. What is the pressure he is exerting on the sand?

P=Force/area

P=80\*9.81/0.8

P=81 pa