**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.

Pmin=f/amin

Pmin=1200/0.06

Pmin=20000fa

Amin=0.2x-.3=0.06atm

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

Pmax=f/amax

Pmax=1200/0.12=10000 atm

Amax=0.4x0.3=0.12m

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.

F=pxa

F=500x0.1875

F=93.75n

A=0.25x0.75=0.1875cm

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=fgh

P=10^3x9.8x2.5

P=24,500atm

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=fgh

P=895x9.8.1.75

P=15,349.25atm

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=fgh

H=p/fg

H=1.5x104/10^3x9.8

H=1.53m

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=90/8=10atm

2x10=20atm