Answer key Mr. Wessner’s Pressure Snap Quiz II Practice 12 marks total

Determine the **pressure, mechanical advantage, Work** & **area** of the bottom of the large piston needed to lift the load of teens up to the next level (floor) in the school ☺ SHOW ALL FORMULI & WORK!!!!!

Remember 1 kg. = 10N. Also remember that pressure in an enclosed system is equal everywhere inside that system.

Pressure = Force/Area

2000 N. of Teens- Output LOAD

N/m2



?

2m2

40 N.

Moves 5 metres distance

1. Calculate the pressure of the system 3marks

P=F/A

40N/2m2

=20n/m2

1. Calculate the Area of the Large piston 3marks

A=F/P

2000N/20N/m2

= 100 m2

1. Calculate the Mechanical advantage of the system MA=load force/effort force 3marks

MA= load force/ effort force or MA=FL/FE

MA= 2000N/40N

MA= 50 –no units (this is an effort advantage of 50 times easier)

1. Calculate the Work output (large syringe) needed to move the teens W=fd Nm (J) 3 marks W=FD

W= 2000N x 5 metres (m)

W= 10000 Nm or (Joules), J)