Topic: Force and Pressure
Subject: Science - Physics
Class: VIII

SCIENCE (PHYSICS)
NUMERICALS WORKSHEET_150924
(FORCE AND PRESSURE)

1. The average weight of an elephant is 4000 N. The surface area of the sole of its foot is 0.1 m^2. Calculate the pressure exerted by one foot of an elephant.

2. A stone weighs 500 N. Calculate the pressure exerted by it if it contacts a surface of area 25 cm^2.

3. In a hydraulic lift, the surface area of the input piston is 10 cm^2. The surface area of the output piston is 3000 cm^2. A 100 N force applied to the input piston raises the output piston. Calculate the force required to raise the output piston.

4. A force of 1200 N acts on the surface of area 10 cm^2 normally. What would be the thrust and pressure on the surface?

5. The elephant weighs 20,000 N and stands on one foot of area 1000 cm^2. How much pressure would it exert on the ground?

6. Calculate the pressure produced by a force of 800 N acting on an area of 2.0 m^2.

7. The pressure of a gas contained in a cylinder with a movable piston is 300 Pa. The area of the piston is 0.5 m^2. Calculate the force that is exerted on the piston.

8. A swimming pool of width 9.0 m and length 24.0 m is filled with water to a depth of 3.0 m. Calculate pressure on the bottom of the pool due to the water.

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