**NOTES 8.2: Calculating Pressure**

* Pressure is the amount of force acting over a given area on an object

High Pressure

Low Pressure

To calculate pressure, we use the following formula

Where P =

A =

F =

Note: 1 Pa=

Recall the equation for area

area = length x width

Example 1: A BMX rider and bike weigh 1200N. They are on a rigid sheet of steel that is 1.0m by 2.0m. How much pressure is exerted by the bike?

Example 2: Jimmy stands on a platform that is 4m2. His mass is 55kg. What is the pressure that Jimmy exerts on the platform?

Now try these:

1. An elephant exerts a force of 65 000N on a platform that is 1.5m by 2m. Calculate the pressure exerted by the elephant.
2. A performer exerts 800N of force on a 1m2 platform. Calculate the pressure.
3. A vehicle loaded with garbage exerts 18 000 N of force on a scale that measures 6.0 m by 6.0 m. What pressure does the scale put on the spring below?
4. A student sings on a stage while standing on a 2.0 m by 2.0 m platform. If the student weighs 800 N, what pressure does the platform put on the stage?

Calculating weight and pressure

1. An object with a mass of 20kg sits on a 3m2 platform. Calculate the pressure exerted by the object
2. A 250kg object sits on a platform that is 3m by 4m. Calculate the pressure exerted by the object
3. An object with a mass of 750g sits on a 1m2  podium. Calculate the pressure exerted
4. An object with a mass of 1.8kg sits on a platform with that is 30cm by 50cm. Calculate the pressure exerted by the block