

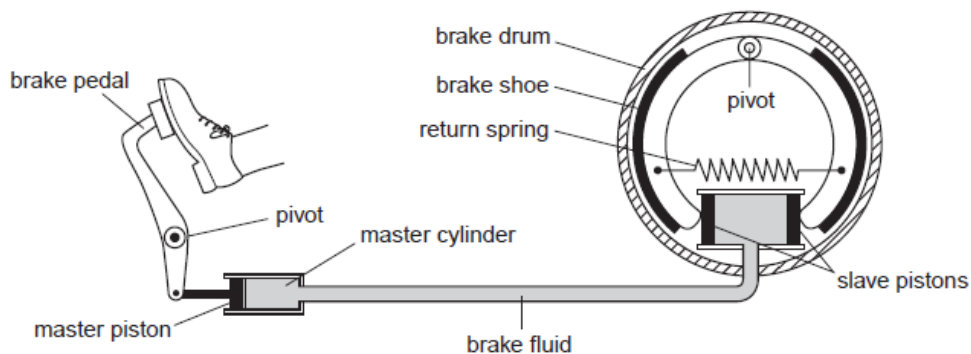
Class VII Physics

Pressure

Week 1

Date: 5 to 9 April 2020

1. The figure shows a car braking system. The brake fluid is an oily liquid.



The brake drum rotates with the wheel of the car.

a. Explain how pushing the brake pedal makes the brake shoes rub against the drum.

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.....

b. The cross-sectional area of the master piston is 2.0cm^2 . A force of 140 N is applied to the master piston.

i. Calculate the pressure created in the brake fluid by the master piston.

Pressure= N/cm^2

Pressure=..... N/m^2

Pressure=.....Pa

- ii. The cross-sectional area of each slave piston is 2.8 cm^2 . Calculate the force exerted on each slave piston by the brake fluid.

Force=..... N

2. The pressure of the atmosphere is $100\,000 \text{ Pa}$. What force does the atmosphere exert on the upper surface of a pond of surface area 20 m^2 ?

A 5000N **B** 100000N **C** 100020N **D** 2000000N

3. A student wants to calculate the pressure she exerts on the floor when she stands on 1 foot. She records the measurements.

| | |
|--|--------------------|
| Weight | 480..... |
| Area of the floor in contact with her foot | 240 cm^2 |

- a. Complete the table by adding the unit of weight.
 b. Calculate the pressure that the student exerts on the floor.

Pressure=.....Pa

Learning Links:

Pressure: <https://youtu.be/0P3b8bWqAkc>

Manometer: https://youtu.be/j_BqJmmguiI

Barometer: <https://youtu.be/v8IUBeWvCpo>

Hydraulic system: <https://youtu.be/2eUkT1HngW0>, <https://youtu.be/K68-wpzVxlw>