

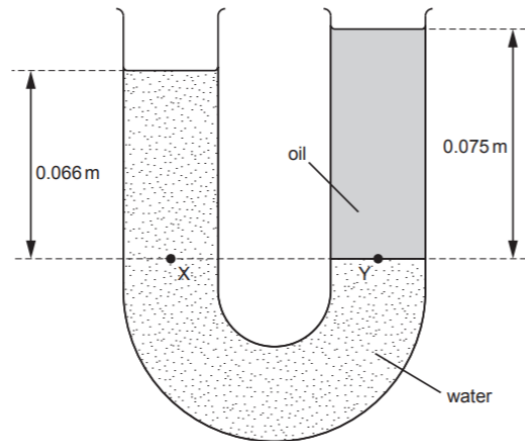
Class VIII Physics

Pressure

Week 1

Date: 5 to 9 April 2020

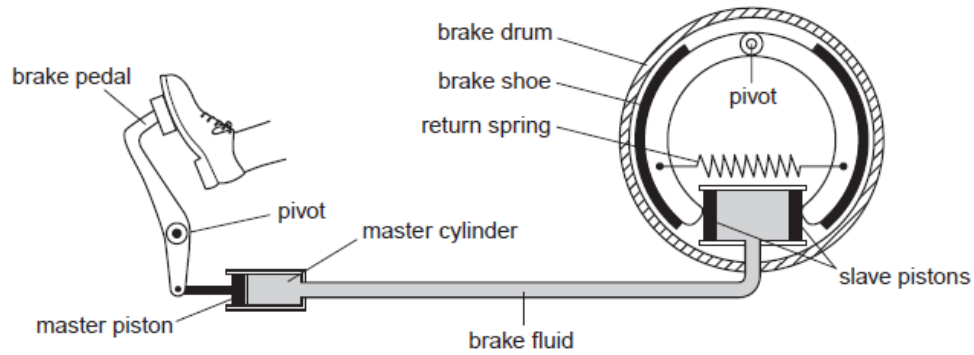
1. A U-shaped tube, of constant cross-sectional area, contains some water of density 1000 kg/m^3 . Oil that does not mix with water is then poured into the right-hand side of the tube.



If the pressure caused by 0.066 m of water at X is equal to the pressure caused by 0.075 m of oil at Y, find the density of oil.

Density=..... kg/m^3

2. 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

Learning Links:

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

Upthrust: <https://youtu.be/9Gw0rlXn6ec>

Manometer: https://youtu.be/j_BqJmmguiI

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

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