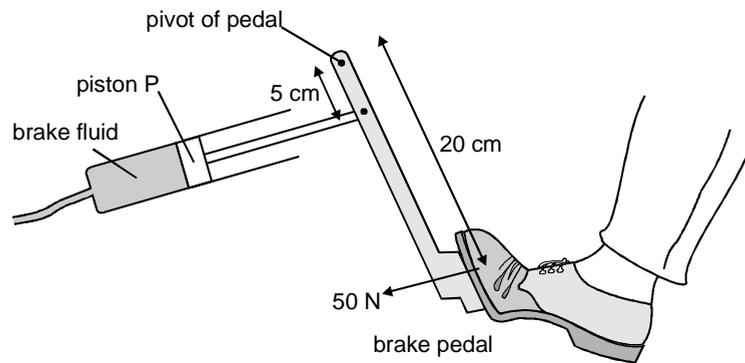


Hard Hydraulics and Levers Question

The diagram below shows the brake pedal used to operate the brakes in a car.
The foot applies a force of 50 N.



- (i) Calculate the force applied to the piston P. Give the unit.
- (ii) The brake fluid pushes another piston, Q, which is attached to the car's brakes. Piston Q has an area which is eight times larger than piston P.
- Calculate the force on the car's brakes. Give the unit.
- (iii) If the driver's foot moves 10cm, what is the work done by the driver?
- (iv) How far does piston P move when the driver's foot moves 10cm?
- (v) How far does piston Q move when the driver's foot moves 10cm?