

5. Bill is an auto mechanic, using a hydraulic lift to pick up his 2,500kg truck so he can work on it. If the area of the input piston is 6cm^2 and the output piston has an area of 600cm^2 , what force must be exerted on the input piston to lift the truck?

6. A dentist chair uses Pascal's principle to raise and lower patients. The chair and patient exert a downward force of 2000N and the chair is attached to a large piston with an area of 1100cm^2 . To move the chair, a small piston with an area of 30cm^2 is used. What force must be applied to the small piston?

7. In a newly designed car with a hydraulic braking system, a force of 85N is applied to one of the master cylinders, which has an area of 8.0 cm^2 . The master cylinder is connected to one brake piston, which exerts a force of 315N. What is the area of the brake piston?

8. Shelly is raising a 2000kg car on her hydraulic lift. If the area of the input piston is 10cm^2 while the area of the output piston is 1400cm^2 , what force must be exerted on the input piston to lift the car?