

- b The diagram below shows a beam balanced on a pivot. Add arrows to show the following forces:
- A 100 N force pressing downwards on the beam that will have the greatest possible clockwise turning effect. Label this 'Force A'.
 - A 200 N force pressing downwards on the beam that will have an anticlockwise turning effect equal in size to the turning effect of Force A. Label this 'Force B'.



- c If a body is in equilibrium, what can you say about the resultant force on the body?

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- d If a body is in equilibrium, what can you say about the resultant turning effect on the body?

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Calculate the pressure when a force of 200 N presses on an area of 0.40 m^2 .

The pressure inside a car tyre is 250 kPa (250 000 Pa). Calculate the total force exerted on the inner surface of the tyre if its surface area is 0.64 m^2 .

Calculate the pressure at the bottom of an oil storage tank of depth 2.50 m. The oil has a density of 980 kg/m^3 and $g = 10 \text{ m/s}^2$.

Use the following data to estimate the height of the Earth's atmosphere:

atmospheric pressure = 100 kPa
density of air = 1.29 kg/m^3 .

A cylinder contains 400 cm^3 of air at a pressure of $2.0 \times 10^5 \text{ Pa}$. The gas is compressed to a volume of 160 cm^3 . Calculate the pressure when the gas has returned to its original temperature.