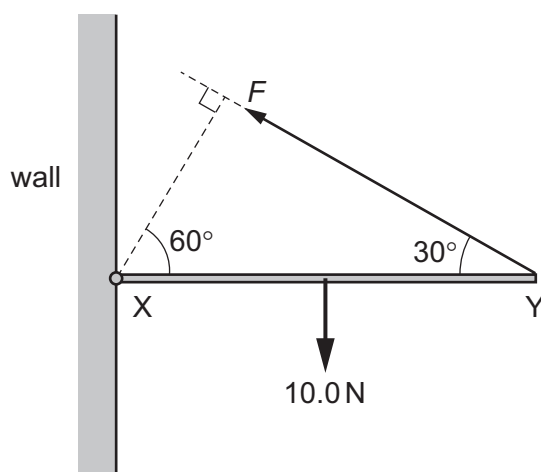


- 12 A uniform rod XY of weight 10.0 N is freely hinged to a wall at X. It is held horizontal by a force F acting from Y at an angle of 30° to the horizontal, as shown.



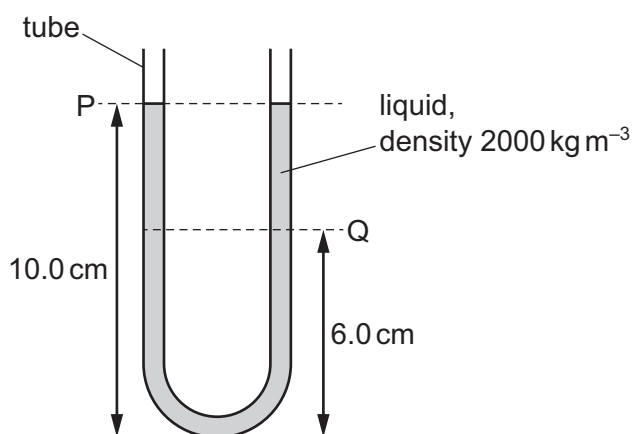
What is the value of F ?

- A 5.0 N B 8.7 N C 10 N D 20 N
- 13 Two solid cubes X and Y are made of material of the same density. Cube X has twice the mass of cube Y.

Cube X has sides of length x . Cube Y has sides of length y .

What is the ratio $\frac{x}{y}$?

- A 1.26 B 1.41 C 2.00 D 8.00
- 14 A U-shaped glass tube contains liquid of density 2000 kg m^{-3} , as shown.



What is the difference in pressure due to the liquid between levels P and Q?

- A 780 Pa B 1200 Pa C 1600 Pa D 2000 Pa