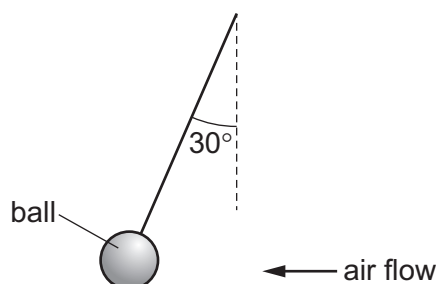


- 13 The diagram shows an experiment to determine the force exerted on a ball by a horizontal air flow.

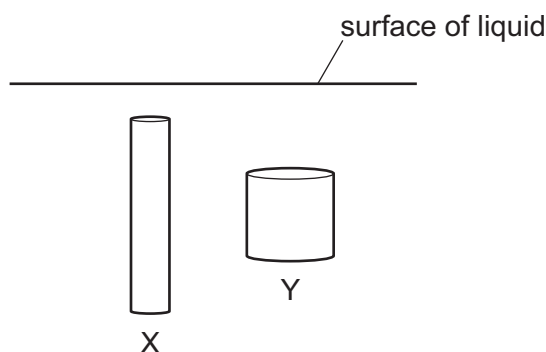


The ball is suspended by a light string and weighs  $0.15\text{ N}$ .

The deflection of the string from vertical is  $30^\circ$ . The ball is in equilibrium.

What is the force on the ball from the air flow?

- A**  $0.075\text{ N}$       **B**  $0.087\text{ N}$       **C**  $0.26\text{ N}$       **D**  $0.30\text{ N}$
- 14 Two solid cylindrical objects X and Y are held fully submerged in a liquid, as shown.



The objects have the same volume. The density of the material of Y is twice the density of the material of X. Both objects are stationary.

Which statement is correct?

- A** The force due to the liquid acting on the top surface of X is greater than that acting on the top surface of Y.
- B** The pressure difference due to the liquid between the top and bottom surfaces of X is the same as that for Y.
- C** The upthrust acting on X is the same as the upthrust acting on Y.
- D** The weight of X is the same as the weight of Y.