10 A ball of mass 0.16 kg is travelling horizontally at a speed of $20\,\mathrm{m\,s^{-1}}$.
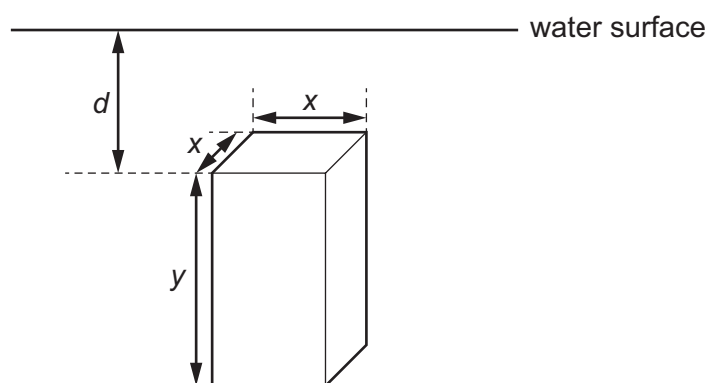
It collides with a wall and rebounds with a speed of $15\,\mathrm{m\,s^{-1}}$ along its original path. The ball is in contact with the wall for a time of 1.0 ms.

What is the average force exerted by the wall on the ball?

A   800 N   **B**   2400 N   **C**   3200 N   **D**   5600 N

11 A uniform solid block is fully submerged in a tank of water.

The dimensions of the block are x and y, as shown.

The block is held vertically in the position shown. The density of the block is the same as the density of the water.

If the block is always held at the same depth d below the surface of the water, which single change would **increase** the magnitude of the upthrust force on the block?

A   decrease the density of the block

B   hold the block horizontally

C   increase dimension y

D   increase the density of the block