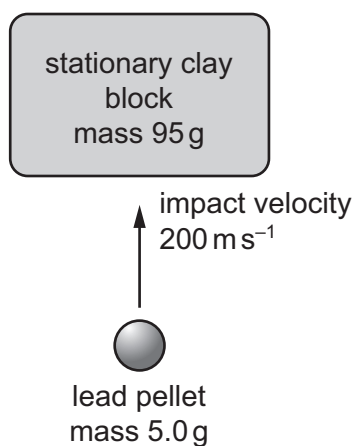10 A lead pellet is shot vertically upwards into a clay block that is stationary at the moment of impact, but is able to rise freely after impact.

stationary clay block
mass 95 g

impact velocity
200 m s⁻¹

lead pellet
mass 5.0 g

The mass of the pellet is 5.0 g and the mass of the clay block is 95 g.

The pellet hits the block with an initial vertical velocity of 200 m s⁻¹. It embeds itself in the block and does not emerge.

How high above its initial position will the block rise?

A   5.1 m   **B**   5.6 m   **C**   10 m   **D**   100 m

11 Two forces act on an object.

Which diagram represents a couple?

A

6 N   6 N

B

6 N

6 N

C

6 N

12 N

D

6 N

6 N

12 N