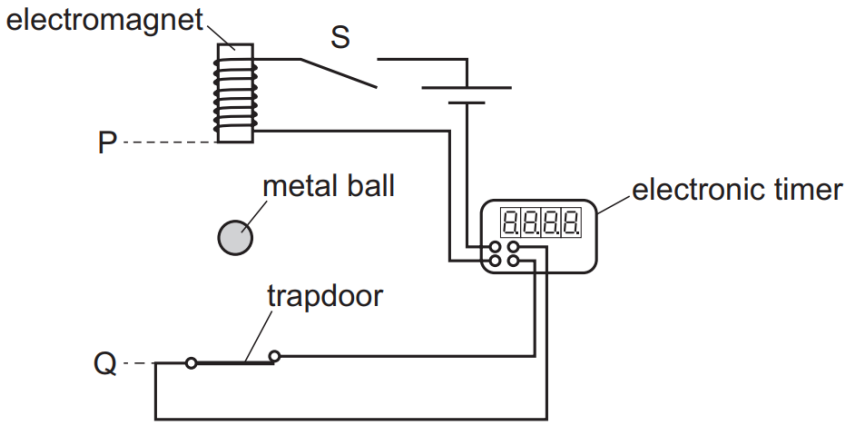
1 A student determines the acceleration of free fall by using a small metal ball, as shown.



When switch S is opened, the ball is released from an electromagnet and an electronic timer is started. The ball then falls vertically downwards. The timer stops when the ball hits a trapdoor. The student measures the distance PQ between the electromagnet and the trapdoor. This distance and the reading on the timer are then used to calculate the acceleration of free fall.

Which statement about errors in the experiment is correct?

A The random error can be reduced by subtracting the diameter of the ball from the distance PQ.

B The random error can be reduced by adding the diameter of the ball to the distance PQ.

C The systematic error can be reduced by subtracting the diameter of the ball from the distance PQ.

D The systematic error can be reduced by adding the diameter of the ball to the distance PQ.