

4 Two small identical objects P and Q are released from rest from the top of a building 80 m above the ground. Q is released 1.0 s after P. Neglecting air resistance, what is the maximum vertical separation between P and Q in the air?

A 5.0 m

B 10 m

C 35 m

D 45 m

5 A small object Q is launched vertically upwards from the ground with an initial speed of 20 m s⁻¹. At the same time, a second object P is launched vertically upwards from the top of a building 80 m above the ground with an initial speed of 10 m s⁻¹. Neglecting air resistance, what is the maximum vertical separation between P and Q in the air?