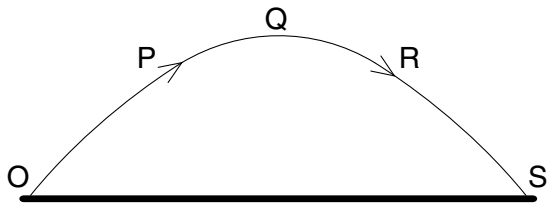
8 A projectile is launched at point O and follows the path OPQRS, as shown. Air resistance may be neglected.



Which statement is true for the projectile when it is at the highest point Q of its path?

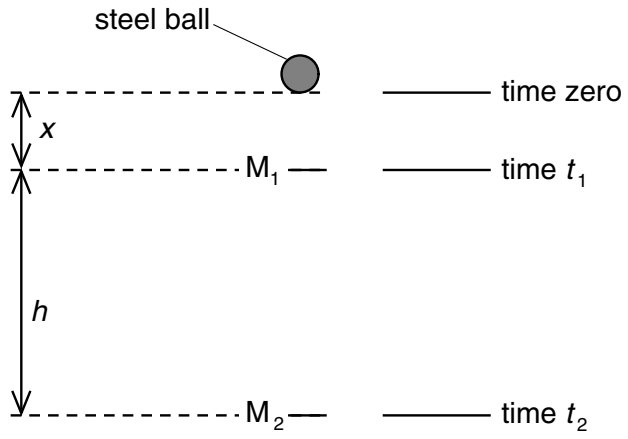
A The horizontal component of the projectile's acceleration is zero.

B The horizontal component of the projectile's velocity is zero.

C The kinetic energy of the projectile is zero.

D The momentum of the projectile is zero.

9 Two markers M_1 and M_2 are set up a vertical distance h apart.



When a steel ball is released from rest from a point a distance x above M_1, it is found that the ball takes time t_1 to reach M_1 and time t_2 to reach M_2.

Which expression gives the acceleration of the ball?

A $\frac{2h}{t_2^2}$ **B** $\frac{2h}{(t_2 + t_1)}$ **C** $\frac{2h}{(t_2 - t_1)^2}$ **D** $\frac{2h}{(t_2^2 - t_1^2)}$