5 On a particular railway, a train driver applies the brake of the train at a yellow signal, a distance of 1.0 km from a red signal, where it stops.

The maximum deceleration of the train is $0.2\,\text{ms}^{-2}$.

Assuming uniform deceleration, what is the maximum safe speed of the train at the yellow signal?

A $20\,\text{ms}^{-1}$ **B** $40\,\text{ms}^{-1}$ **C** $200\,\text{ms}^{-1}$ **D** $400\,\text{ms}^{-1}$