9   A locomotive develops a constant power.

The locomotive pulls a train of total mass 3.0×10^5 kg against a constant frictional force of 5.0×10^4 N.

The acceleration of the train is $0.50\,\mathrm{m\,s^{-2}}$ when travelling at $10\,\mathrm{m\,s^{-1}}$.

What is the maximum speed that the train can achieve on a level track?

A $20\,\mathrm{m\,s^{-1}}$ B $30\,\mathrm{m\,s^{-1}}$ C $40\,\mathrm{m\,s^{-1}}$ D $50\,\mathrm{m\,s^{-1}}$