Assume that the distance d taken to stop a moving car of mass m depends on its speed v and on the ratio F/m, where F is the magnitude of the frictional force exerted on the car when it brakes. Select the option that gives a form of the relationship that might be predicted using the method of dimensional analysis, where k is a dimensionless constant.

Options

A $d = kv\left(\frac{F}{m}\right)^{-1}$ **B** $d = kv\left(\frac{F}{m}\right)^{-2}$

C $d = kv^2\left(\frac{F}{m}\right)^{-2}$ **D** $d = kv^{-2}\left(\frac{F}{m}\right)^{-1}$

E $d = kv^2\left(\frac{F}{m}\right)^{-1}$ **F** $d = kv^{-2}\left(\frac{F}{m}\right)^{2}$

G $d = kv^2\left(\frac{F}{m}\right)$ **H** $d = kv^{-2}\left(\frac{F}{m}\right)$.