

- 9 The resultant force F on a raindrop of mass m falling with velocity v is given by the equation

$$F = mg - kv^2$$

where k is a constant and g is the acceleration of free fall.

What is the velocity of the raindrop when it reaches a constant (terminal) velocity?

A $\sqrt{\frac{k}{mg}}$

B $\frac{k}{mg}$

C $\sqrt{\frac{mg}{k}}$

D $\frac{mg}{k}$