12 A planet has mass M and radius R.

The gravitational constant is G.

An object of mass m is launched vertically upwards from the surface of the planet.

Assuming negligible resistance from the planet's atmosphere, what is the speed at which the object must be launched so that it can escape from the planet's gravitational field?

A $\sqrt{\frac{2GM}{R}}$ **B** $\frac{2GM}{R}$ **C** $\sqrt{\frac{2GMm}{R}}$ **D** $\frac{2GMm}{R}$