10 The escape speed from the surface of the Moon is v_m.

The escape speed from the surface of the Earth is v_E.

The ratios of the masses and the radii of the Moon and the Earth are:

$$\frac{M_m}{M_E} = \frac{1}{81}; \quad \frac{r_m}{r_E} = \frac{1}{4}$$

where M_m is the mass of the Moon, M_E is the mass of the Earth, r_m is the radius of the Moon and r_E is the radius of the Earth.

What is the ratio of $\frac{v_m}{v_E}$?

A 0.049 **B** 0.098 **C** 0.22 **D** 0.31