10 Two satellites P and Q orbit the Earth due to the gravitational field of the Earth. P and Q are at distances R and $3R$ from the Earth's surface respectively, where R is the radius of the earth. The speed of P is v.

What is the speed of Q?

A $\sqrt{\dfrac{1}{3}}\,v$ B $\sqrt{\dfrac{1}{2}}\,v$ C $\sqrt{2}\,v$ D $\sqrt{3}\,v$