

- 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 $\sqrt{\frac{1}{3}} v$

B $\sqrt{\frac{1}{2}} v$

C $\sqrt{2} v$

D $\sqrt{3} v$

- 11** Mars has a diameter that is approximately 0.5 times the diameter of the Earth, and the mass of