

**14** A mass  $m$  moves at speed  $v$  around a stationary mass  $M$ . The radius of its orbit is  $r$ .

$m$  is then projected into a new, stable orbit with a speed of  $\frac{v}{4}$  around the same mass  $M$ .

What is the radius of its new orbit?

**A**  $\frac{r}{16}$

**B**  $2r$

**C**  $4r$

**D**  $16r$