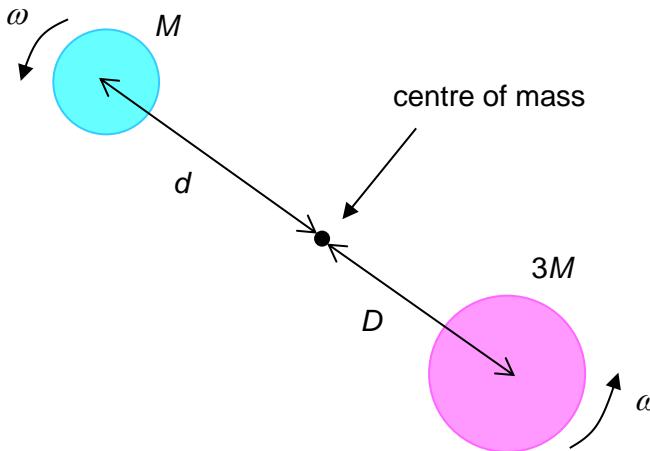


- 11 A binary star is a system of two stars that orbit around each other with angular velocity ω about their centre of mass. The stars have masses M and $3M$ respectively and the distances of stars from their centre of mass are d and D respectively.



Not to scale

Which expression gives the total kinetic energy of the two stars?

A $\frac{3GM^2}{8D}$

B $\frac{GM^2}{2D}$

C $\frac{3GM^2}{2D}$

D $\frac{2GM^2}{D}$