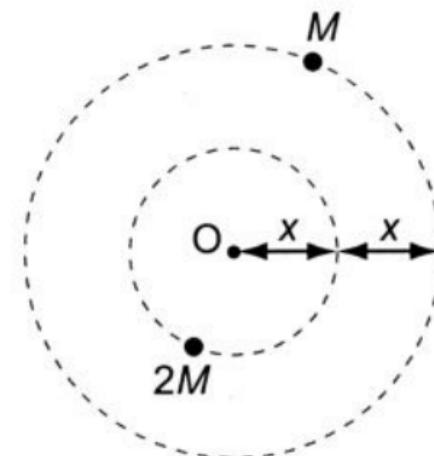


- 16 Two stars of mass  $M$  and  $2M$ , a distance  $3x$  apart, rotate in circles about their common centre of mass O.



The gravitational force acting on the stars can be written as  $\frac{kGM^2}{x^2}$ .

What is the value of  $k$ ?

A 0.22

B 0.50

C 0.67

D 2.0

- 17 A satellite orbits a planet at a distance  $r$  from its centre. Its gravitational potential energy