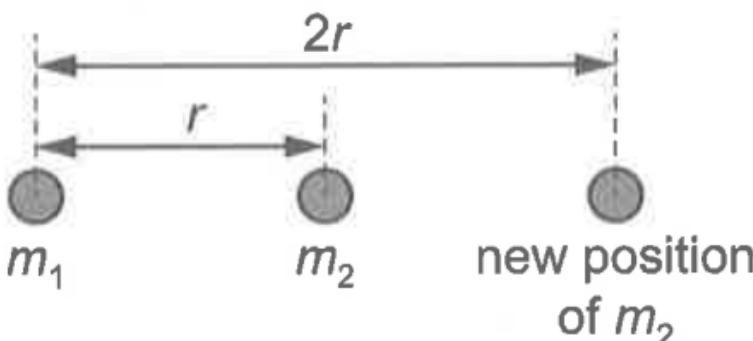


- 12 Two objects are separated by a distance r . The objects can be considered to be point masses of mass m_1 and m_2 . The object of mass m_1 is fixed in position. The object of mass m_2 is moved so that the separation of the two objects is $2r$.



What is the increase in gravitational potential energy of the object of mass m_2 ?

A $\frac{Gm_1m_2}{2r}$

B $\frac{-Gm_1m_2}{2r}$

C $\frac{3Gm_1m_2}{4r^2}$

D $\frac{-3Gm_1m_2}{4r^2}$