

Answer on question #59285, Physics / Classical Mechanics

Question 2 particles of masses 'M' and 'm',seperated by an infinite distance are released from rest.they move under mutual gravitational attraction.then the velocity of approach at an instant at which mutual separation id 'd' is

Solution From energy conservation

$$\frac{(m+M)v^2}{2} = \frac{GMm}{r^2}$$

$$v = \sqrt{\frac{2GMm}{(M+m)r^2}}$$