Unit 8 - Week 6

Assignment 6

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-10-28, 23:59 IST.

1) In an attractive $1/r$ potential compare circular and parabolic orbits corresponding to same angular momentum. The perihelion distance of the parabola is α times the radius of the circle. The α is equal to ***4 points***

- $1/\sqrt{2}$
- $1/2$
- 2

No, the answer is incorrect.
Score: 0
Accepted Answers:
$1/2$

2) A rock is fired vertically upwards from the surface of the Earth. It reaches a maximum distance αR from the center. Here R is the radius of the Earth. Let v denote the speed with which the rock was fired. Now, imagine that the same rock is taken to a distance βR from the center of the Earth, and then fired with the same speed v as before. This time, however, the direction of v is **not** along the line joining the stone and the center of the Earth. The path of the stone will be *parabolic* if ***6 points***

- $\frac{1}{\alpha}+\frac{1}{\beta}=1$
- $\frac{1}{\alpha}+\frac{1}{\beta}>1$
- $\frac{1}{\alpha}+\frac{1}{\beta}<1$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$\frac{1}{\alpha}+\frac{1}{\beta}=1$