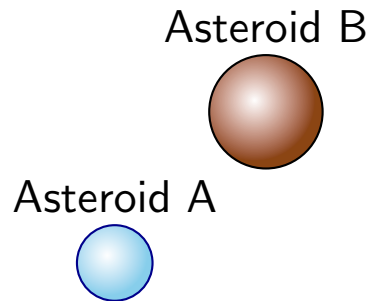


Question 1

Two asteroids are in outer space. Asteroid B has mass three times that of asteroid A. Let $F_{A \text{ on } B}$ be the magnitude of the force exerted by A on B and $F_{B \text{ on } A}$ be the magnitude of the force exerted by B on A.



Which of the following is true?

1. $F_{A \text{ on } B} = F_{B \text{ on } A}$
2. $F_{A \text{ on } B} = \frac{1}{3} F_{B \text{ on } A}$
3. $F_{A \text{ on } B} = \frac{1}{9} F_{B \text{ on } A}$
4. $F_{A \text{ on } B} = 3 F_{B \text{ on } A}$
5. $F_{A \text{ on } B} = 9 F_{B \text{ on } A}$

Question 2

A red ball with mass m released is near to Earth's surface. A blue ball with mass $5m$ is also released near to Earth's surface. Both are the same distance from Earth's center. Ignore air resistance, the Sun and other planets.

Let a_{red} be the acceleration of the red ball and a_{blue} be the acceleration of the blue ball. Which of the following is true?

1. $a_{\text{red}} = 5a_{\text{blue}}$
2. $a_{\text{red}} = a_{\text{blue}}$
3. $a_{\text{red}} = \frac{1}{5} a_{\text{blue}}$