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# **Generate 10 problems using symbolic algebra that demonstrate Newton's Law of Gravity and Centripetal Acceleration. Do not use numbers, only variable names**

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1. Find the gravitational force between two objects when the distance between them is represented by  $R$ .
2. Find the acceleration of an object due to the combined gravitational forces of two other objects when the distances of the other two objects from the object are represented by  $d_1$  and  $d_2$ .
3. Find the centripetal acceleration of an object caused by its movement in a circular orbit about another object when the size of the circle is represented by  $R$ .
4. Find the gravitational force between two objects when the masses of the two objects are represented by  $m_1$  and  $m_2$ .
5. Find the centripetal acceleration of an object moving in a circular path when the object's mass is represented by  $m$  and the radius of the orbit is represented by  $r$ .
6. Find the acceleration of an object due to the gravitational force of another object when the distance between the two objects is represented by  $d$  and the mass of the second object is represented by  $m$ .
7. Find the centripetal force acting on an object moving in an orbital path when the speed of the object is represented by  $v$  and the radius of the path is represented by  $r$ .
8. Find the centripetal force acting on an object moving in an elliptical orbit when the speed of the object is represented by  $v$  and the distance from the other object is represented by  $d$ .
9. Find the centripetal acceleration of an object moving in a circular path when the angular velocity of the object is represented by  $\omega$  and the radius of the path is represented by  $R$ .
10. Find the centripetal force necessary for an object to move in a circular path

when the mass of the object is represented by  $m$ , the speed of the object is represented by  $v$ , and the radius of the path is represented by  $r$ .