Matching

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| **Answer** | **Vocabulary** | **Definition** |
|  | 1. Circular Motion | 1. The force that causes centripetal acceleration |
|  | 1. Rotational Motion | 1. Minimum velocity needed to maintain vertical circular motion |
|  | 1. Tangential velocity | 1. The rate that an object moves on a circular path |
|  | 1. Centripetal Acceleration | 1. The movement of an object around an external point |
|  | 1. Centripetal Force | 1. The movement of an object around an internal point |
|  | 1. Critical velocity | 1. The force attraction between two bodies |
|  | 1. Angular velocity | 1. Acceleration due to a change in direction |
|  | 1. Gravity | 1. Causes angular acceleration |
|  | 1. Torque | 1. Occurs when clockwise torque equals counterclockwise torque |
|  | 1. 2nd condition of equilibrium | 1. The rate that an object rotates |

**Circular Motion**

1. Given a) solve for v = b) solve for r =
2. Given List two factors influencing centripetal acceleration
4. Increasing the velocity of an object in circular motion will cause the centripetal acceleration to (increase or decrease)
5. Increasing the radius of the circle traveled by the object will cause the centripetal acceleration to

(Increase or decrease)

1. An object is experiencing centripetal acceleration
2. Is constantly changing direction
3. Is always speeding up
4. Is always slowing down
5. None of these
6. For a car moving in circular path, the smaller the radius of the circle
7. The greater the force needed to make the turn
8. The less the force needed to make the turn
9. The same force is needed to make the turn
10. Which of the following is an example of circular motion
11. Bullet fired from a gun
12. Earth orbiting the sun
13. Weights bouncing up and down on a spring
14. How does the mass of an object moving in a circle affect the force needed to pull it into a circular path?
15. Inversely b) directly c) neither d) both
16. If there is no friction, a car a) must go very slow to make a turn b) will go very fast around a turn c) will not be able to turn d) all of these
17. A rubber stopper moves in a vertical circle. The tension in the string a) is constant throughout the motion b) the greatest at the top of the circle c) the least at the top of circle d) is the greatest at the bottom of the circle.
18. Centripetal force and centripetal acceleration a) are both directed toward the center of circular motion b) are both tangent to the circular path c) are perpendicular to each other d) are 180° opposite of each