



Circular Motion

DIRECTIONS: On the line provided, write the letter of the best answer for the following statements.

- _____1. Which has greater linear speed, a horse near the outside rail of a merry-go-round or a horse near the inside rail?
- a) the outside horse
 - b) the inside horse
 - c) neither – they both have the same linear speed
- _____2. Which of the following is not a unit of rotational speed?
- a) revolutions per second
 - b) rotations per second.
 - c) revolutions per minute
 - d) meters per second
- _____3. What is the direction of the force that acts on clothes in the spin cycle of a washing machine?
- a) outward
 - b) inward
 - c) up
 - d) down
- _____4. A tin can whirled on the end of a string moves in a circle because
- a) once the can starts moving, that is its natural tendency.
 - b) the can continually pulls on the string.
 - c) there is a force on the can pulling it outward.
 - d) there is an inward force acting on the can.
 - e) All of the above.
- _____5. If you whirl a tin can on the end of a string and the string suddenly breaks, the can will
- a) fly directly away from you.
 - b) fly directly toward you.
 - c) fly off, tangent to its circular path.
 - d) spiral away from your hand.
- _____6. Which has greater angular speed, a horse near the outside rail of a merry-go-round or a horse near the inside rail?
- a) the outside horse
 - b) the inside horse
 - c) neither – they both have the same angular speed

- _____7. A swimming area in a rotating space habitat is located in a one-fourth g region. If a diver can jump 1 meter high in a 1- g region, how high can the same diver jump in the swimming area?
- a) 1 m
 - b) 2 m
 - c) 4 m
 - d) 16 m
- _____8. Where is the center of gravity of a softball bat?
- a) In the thin handle.
 - b) Exactly half way along the bat.
 - c) In the more massive end of the bat.

DIRECTIONS: Solve and SHOW YOUR DIAGRAM AND YOUR WORK.

- _____9. A roof turbine is rotating with an angular speed of 16.0 radians per second. It then, accelerates at a constant rate of 2.3 radians per second per second.
- _____
- a) Find the angular velocity (ω) of the turbine after 5.0 seconds.
 - b) Find the angular displacement(θ) after 5.0 seconds.

***“Think like a wise man but communicate in the language of the people.”
--William Butler Yeats***