

**Circular Motion  
and Gravitation****HOLT PHYSICS****Concept Review***Circular Motion*

1. A Ferris wheel car is moving in a circular path at a constant speed.

a. Is the car accelerating? \_\_\_\_\_

b. How can the car have a non-zero acceleration if the speed is constant?

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c. What is the direction of centripetal acceleration?

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d. What is the magnitude of the centripetal acceleration if the tangential speed of the car is 2.0 m/s and the radius of the wheel is 83 m?

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2. The hammer throw is a track-and-field event in which the thrower swings a heavy metal ball (the “hammer”) on a wire in a circular motion, then releases the wire, sending the hammer flying.

a. What provides the force to keep the hammer moving in a circle before the wire is released?

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b. What is the name for this force? \_\_\_\_\_

c. In what direction does this force act? \_\_\_\_\_

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d. What is the term for the hammer’s tendency to move in a straight line?

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e. Suppose the hammer has a mass of 7.26 kg, the wire is 1.00 m long, and the force keeping the hammer moving in a circle is  $7.43 \times 10^3$  N. What will the hammer’s speed be when the thrower releases the wire?