8.6: General Questions

1. Assume that you have the object on the rope circling overhead. At which point in the orbit should you release the object if you want to hit a target (X marks the spot) directly in front of you? Draw a diagram. Do not attempt to confirm this experimentally!

Figure 8.6.1: Object on the rope circling overhead

2. If you maintain a constant rate of speed for the orbiting object, is there acceleration? Explain.
3. Draw the sketch below. Draw arrows to indicate the direction of the force keeping the spaceship in orbit.

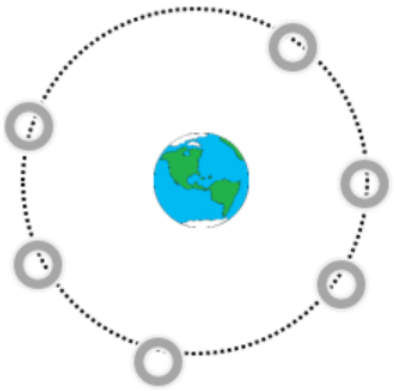

Figure 8.6.2

4. Assume the spaceship has a deflector screen which makes it immune to the force from Earth. If the ship is traveling along in its orbit, and the ship turns off its engines at the same time it turns on its deflector shield, what will happen? Choose one answer and defend it.
   a. The ship will continue traveling in a circle.
   b. The ship will travel in a straight line tangent to the circular orbit.
   c. The ship will spiral down to the Earth.
   d. The ship will come to a full stop, hovering above the Earth.

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