# Cycle 20 Circular Motion

## 1. Angular vs Regular Velocity

1. On the Swings, some riders are closer to the center of the circle than others.

a) Who has the greater **angular** velocity (RPMs)?

☐ Inner riders ☐ Outer riders ☐ It's the same.

b) Who has the greater **regular** velocity?

☐ Inner riders ☐ Outer riders ☐ It's the same.

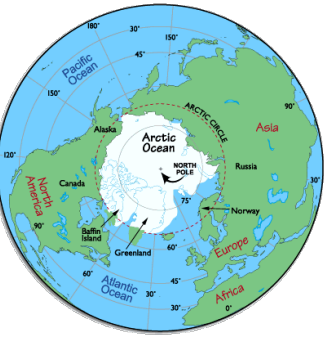
2. In the Shot Put (top) and the Hammer Throw (bottom), the projectiles have almost exactly the same mass.

Which sport has the farther throws?

☐ Shotput ☐ Hammer Throw ☐ It's the same.

WHY??


3. Why does the outer skater have a head start?




4. As the Earth spins…

a) Where is the greater **angular** velocity?

☐ At the Equator ☐ At the Poles ☐ It's the same

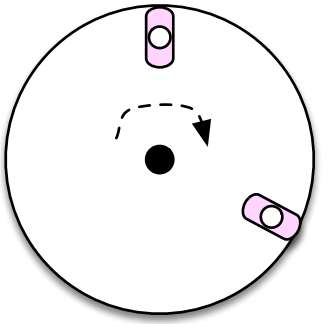
b) Where is the greater **regular** velocity?

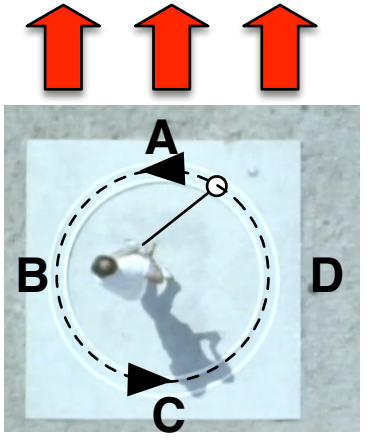
☐ At the Equator ☐ At the Poles ☐ It's the same

b) Where is there ZERO **regular** velocity?

☐ At the Equator ☐ At the Poles ☐ It's the same

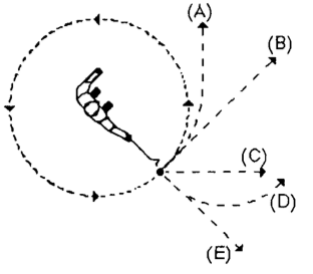
1. At right is the top view of a playground merry-go-round. if the person were to fall off at the moments shown, draw tangent arrows to show her path.

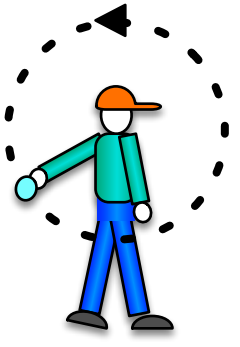





2. The red arrows show which way the hammer thrower is supposed to throw the hammer. At which point should he release it - when the ball gets to A, B, C or D?

3. A heavy ball is attached to a string and swung in a circular path as shown in the diagram. At the point shown, the string suddenly breaks. Which path is the one the ball will actually follow - A, B, C, D, or E?



4. (Tricky!) Softball pitchers move the ball around in a circular motion before releasing the ball. Draw an arrow to show the tangential velocity at the point should the pitcher release the ball to get maximum Range.