

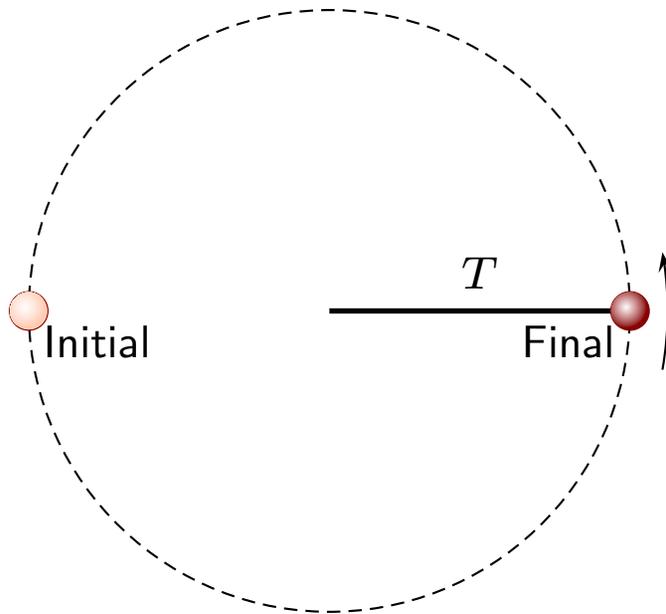
Warm Up Question 1

An object slides along a curved track, such as that illustrated in Fig 7.12 (Example 7.9). Is the work done by the normal force, while it slides zero or not? Explain your answer.

1. Non-zero. Normal is non-zero when the block is in contact with the track.
2. Non-zero. Force is non-zero, distance is non-zero.
3. Non-zero. Force is non-zero and has a component along the motion.
4. Zero. The angle between the force and displacement is always 90° .

Question 1

A ball swings in a horizontal circle with a constant speed.



Which of the following is true regarding the work done by the string as the ball moves from the initial to the final location?

1. $W = 0$.
2. $W > 0$.
3. $W < 0$.

Warm Up Question 2

A block is attached to a spring and the block can slide across a horizontal frictionless surface. The spring is compressed by a distance of 2 m and the block is released from rest. The block moves and the spring eventually stretches, reaching a maximum stretch of 2 m; the block is briefly at rest at this point. Is the work done by the spring from the moment that it is released until it reaches its maximum stretch zero or not? Explain your answer.

1. Not zero. The block moves and a force acts on it.
2. Not zero. The spring exerts a force in the direction that the block moves.
3. Not zero. The angle between the force and motion is 180° .
4. Zero. Integral/area under curve of F gives this.
5. Zero. Positive work until it reaches equilibrium, negative after.
6. Zero. The difference of the $\frac{1}{2}kx^2$ terms gives zero.