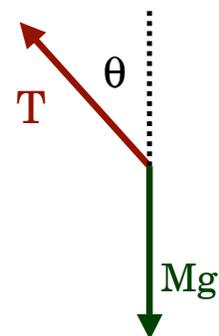


Consider an object moving with constant speed,  $v$ , in a circle with constant radius,  $R$ . Which of the following is true?

- 1) The speed is constant so the magnitude of the acceleration is zero.
- 2) The distance from the center is constant so the radial component of the velocity is always zero so the radial component of the acceleration must be zero.
- 3) The speed is constant so the component of the acceleration in the direction of motion is always zero.
- 4) The component of the acceleration in the direction of motion is not zero.
- 5) The radial component of the acceleration and the component in the direction of motion are sometimes zero and sometimes not.
- 6) More than one of the above is true.
- 7) None of the above is true.



These two forces can add up to zero under the following conditions:

- 1) Never, it's impossible.
- 2) Only for the right values of the magnitudes of  $T$  and  $M$ .
- 3) Only for the right value of the angle.
- 4) Only for the right values of the magnitudes and the angle.
- 5) Need more information to answer.