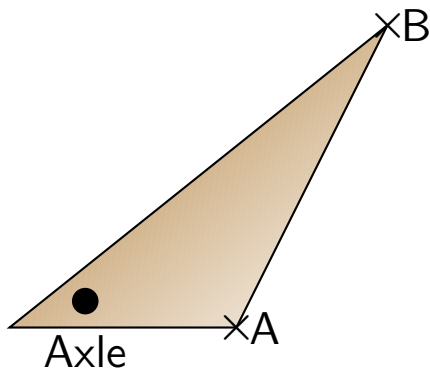# Question 1

A flat triangular plate has an axle that passes perpendicularly through it. The plate rotates counter-clockwise at an increasing rate.
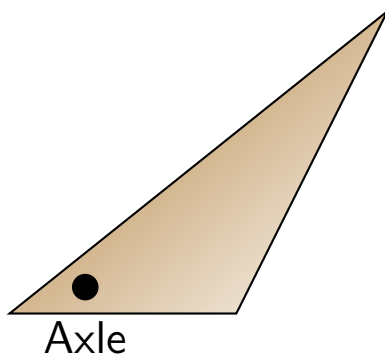

Which of the following is true regarding angular velocities of the two marked points at the same instant?

1. $\omega_A = \omega_B = 0$

2. $\omega_A = \omega_B \neq 0$

3. $\omega_A > \omega_B$

4. $\omega_A < \omega_B$

Question 2

A flat triangular plate has an axle that passes perpendicularly through it. The plate rotates clockwise at an decreasing rate.

Axle

Which of the following is true?

1. $\omega > 0$ and $\alpha > 0$

2. $\omega > 0$ and $\alpha < 0$

3. $\omega < 0$ and $\alpha > 0$

4. $\omega < 0$ and $\alpha < 0$

Warm Up Question 1

Assume that Earth rotates at a constant rate. Consider any two locations on Earth. Are the angular velocities at these locations the same or different? Are the magnitudes of the linear velocities the same or different? Explain your answers.

1. Angular velocity same. Magnitude linear velocity same.

2. Angular velocity same. Magnitude linear velocity different.

3. Angular velocity different. Magnitude linear velocity same.

4. Angular velocity different. Magnitude linear velocity different.

Warm Up Question 2

An axle passes through one end of a meter stick. A $10\,\text{N}$ force pulls at the other end of perpendicular to the stick. The point of application of this force is then shifted at a point $25\,\text{cm}$ from the axle and the force stays constant. Describe as precisely as possible how this changes the torque exerted by the force on the stick. Explain your answer.

1. Response

2. Response