

QUESTION 1



Select the correct answer.

A car travels around a roundabout in 25 s. Its angular displacement is 2.9 rad. What is the car's average angular velocity during this motion?

☐ 8.6 rad/s

☐ 3.0 rad/s

☒ 0.12 rad/s



☐ 73 rad/s

QUESTION 2



Select the correct answer.

A rotating wheel had a frequency of 52.0 Hz. It had an angular displacement of 9280°

starting from rest, what is the duration of time in seconds for this angular displacement to happen?

☐ 0.232 s

☐ 3.63 s

☐

☐

1.52 s

☒

0.496 s

✓

QUESTION 3



Select the correct answer.

A motor has an angular speed of 1200 rad/s. What is its frequency?

☐

280 Hz

☐

300 Hz

☒

190 Hz

✓

☐

150 Hz

QUESTION 4



Select the correct answer.

The frequency of a rotating electric motor is 530 Hz. What is its angular velocity?

☐

3500 rad/s

☐ 2700 rad/s

☐ 6900 rad/s

☒ 3300 rad/s



QUESTION 5



Select the correct answer.

The frequency can be found by the equation

$$f = \frac{\omega}{2\pi}$$

, what is its unit?

☐ m/s

☐ rad

☒ Hz



☐ s

QUESTION 6



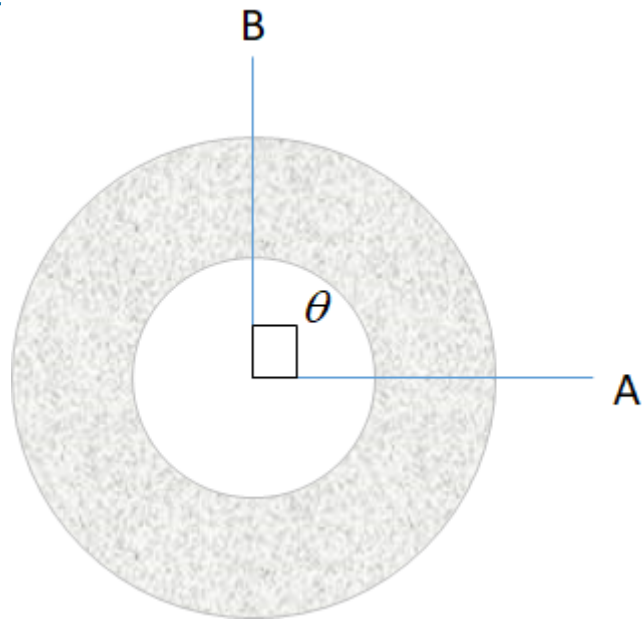
Select the correct answers from the drop-down menus.

This wheel takes 0.32 seconds to cover an angle from A to B. Its angular velocity is

4.9 rad/s ✓ ▼

. Its frequency is

0.78 s⁻¹ ✓ ▼



QUESTION 7



Select the correct answer.

What is the frequency of a toy car moving at 25 rad per second around a circular track?

☐ 3.2 Hz

☒ 4.0 Hz ✓

☐ 15 Hz

☐ 25 Hz

QUESTION 8



Select the correct answer.

Amina started rotating a ball at an angular position of

45.0°

from rest. She rotated the ball till it reached

945°

in 6.00 seconds. What is the angular velocity of the ball?



1.43 rad/s



5.61 rad/s



6.98 rad/s



2.62 rad/s

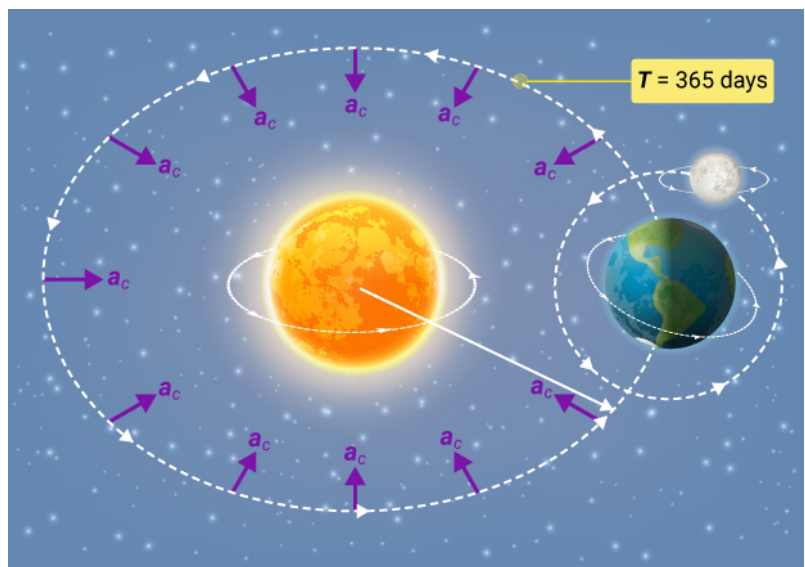


QUESTION 9



Select the correct answer.

It takes Earth 365 days to orbit the Sun. What is Earth's angular velocity in rad/s? Assume that the orbit is perfectly circular.



0.99 rad/s

☐ 0.23 rad/s



2.0
X
 10^{-7} rad/s



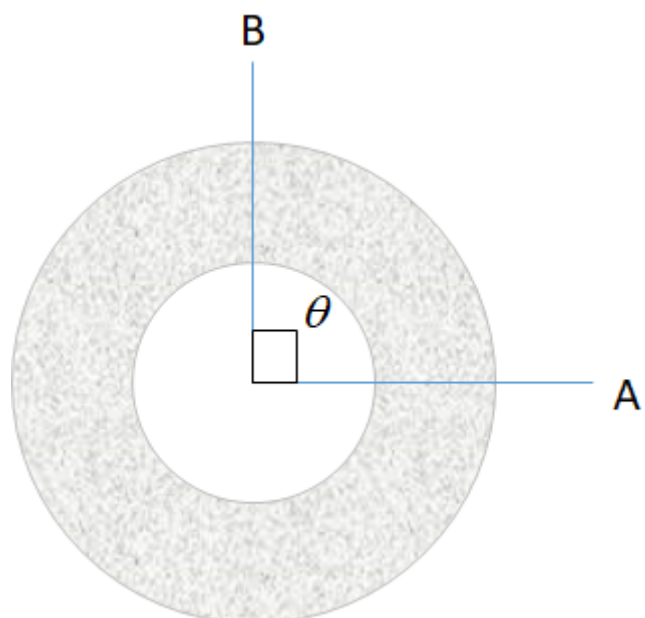
8.6
X
 10^{-3} rad/s

QUESTION 10



Select the correct answer.

A wheel makes a quarter turn from position A to position B in 0.25 seconds. What is the wheel's angular velocity?



6.3 rad/s



1.2 rad/s

☐ 3.6 rad/s

☐ 1.8 rad/s

QUESTION 11

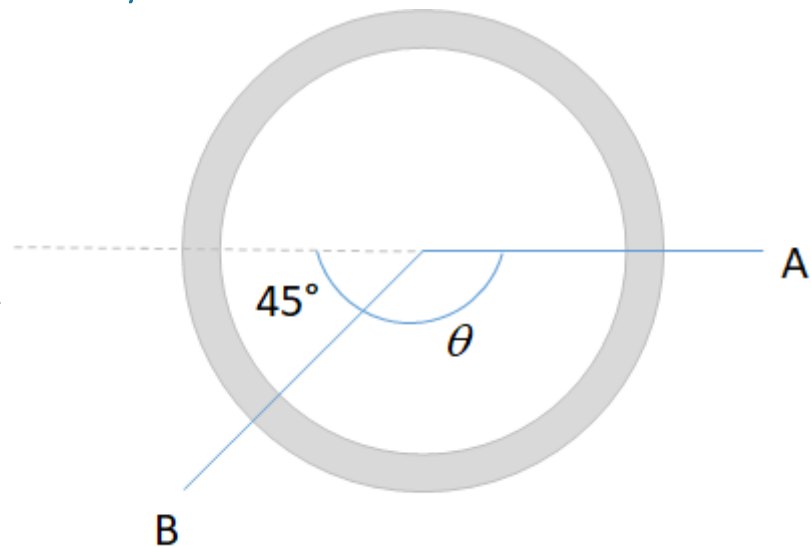


Select the correct answer from the drop-down menu.

A bicycle wheel turns from point A to point B, covering an angle (θ)

) in 0.24 seconds. The angular velocity of the wheel

is ✓ ▼.



QUESTION 12



Select the correct answer.

Which of the following relationships is the correct equation that relates the linear speed and angular speed?

☐ $\omega = \frac{\Delta \theta}{\Delta t} v$

☐ $v = \frac{\Delta \omega}{\Delta t}$

- ☐ Δt
- ☐ $\omega = vr$
- ☒ $v = r\omega$ ✓

QUESTION 13



Select the correct answer from the drop-down menu.

The angular velocity at the edge of a rotating rigid body is equal to ✓ ▼ the angular velocity near its center.

QUESTION 14



Select the correct answer.

What Greek letter is used to represent angular velocity?

- ☒ ω ✓
- ☐ π
- ☐ τ

☐ θ

QUESTION 15



Choose the correct statement.

Which of the below statements is correct about the linear and angular velocity?

☐

Angular velocity (

ω

) is calculated with

$$\frac{\Delta t}{\Delta x}$$

and velocity (v) is calculated with

$$\frac{\Delta t}{\Delta \theta}$$

.

☐

Velocity (v) is calculated with

$$\frac{\Delta t}{\Delta x}$$

and angular velocity (

ω

) is calculated with

$$\frac{\Delta t}{\Delta \theta}$$

.

Velocity (v) is calculated with

velocity (v) is calculated with

$$\frac{\Delta x}{\Delta t}$$

and angular velocity (ω)

ω

) is calculated with

$$\frac{\Delta \theta}{\Delta t}$$

.



Angular velocity (ω)

ω

) is calculated with

$$\frac{\Delta x}{\Delta t}$$

and velocity (v) is calculated with

$$\frac{\Delta \theta}{\Delta t}$$

.