

Pre-Calculus 6.1 Part II Linear, Angular Velocity and Their Relationship

Lesson 172 | Trigonometry | Angular and linear velocity

<https://www.youtube.com/watch?v=ThOdd7bQCvA>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

A wheel of radius 9 cm rotates at 30 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

02

A wheel of radius 3 cm rotates at 42 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

03

A wheel of radius 9 cm rotates at 12 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

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04

A wheel of radius 7 cm rotates at 54 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

05

A wheel of radius 9 cm rotates at 9 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

06

A wheel of radius 10 cm rotates at 15 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

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01

A wheel of radius 9 cm rotates at 30 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

Each revolution is 2π radians: $\omega = 60\pi$ rad/min. Linear speed $v = r\omega = 540\pi$ cm/min.

02

A wheel of radius 3 cm rotates at 42 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

Each revolution is 2π radians: $\omega = 84\pi$ rad/min. Linear speed $v = r\omega = 252\pi$ cm/min.

03

A wheel of radius 9 cm rotates at 12 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

Each revolution is 2π radians: $\omega = 24\pi$ rad/min. Linear speed $v = r\omega = 216\pi$ cm/min.

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04

A wheel of radius 7 cm rotates at 54 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

Each revolution is 2π radians: $\omega = 108\pi$ rad/min. Linear speed $v = r\omega = 756\pi$ cm/min.

05

A wheel of radius 9 cm rotates at 9 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

Each revolution is 2π radians: $\omega = 18\pi$ rad/min. Linear speed $v = r\omega = 162\pi$ cm/min.

06

A wheel of radius 10 cm rotates at 15 revolutions per minute. Find angular speed in rad/min and rim speed in cm/min.

Each revolution is 2π radians: $\omega = 30\pi$ rad/min. Linear speed $v = r\omega = 300\pi$ cm/min.