

**1** A car tire with a radius of 16 inches is spinning at a rate of  $320\pi$  radians per minute. Find the linear speed of the tire in feet per second.

A)  $1,260\pi$  ft/s  
 B)  $480\pi$  ft/s  
 C)  $1,920\pi$  ft/s  
 D)  $320\pi$  ft/s  
 E)  $3.8\pi$  ft/s

**4** A ceiling fan with a radius of 18 inches is spinning at a rate of  $320\pi$  radians per second. Find the angular speed of the fan in radians per second.

A)  $160\pi$  rad/min  
 B)  $320\pi$  rad/min  
 C)  $280\pi$  rad/min  
 D)  $120\pi$  rad/min  
 E)  $240\pi$  rad/min

**6** A Ferris wheel with a diameter of 200 feet is spinning at a rate of 6.4 miles per hour. Find the angular speed of the wheel in radians per second.

A) 6.4 rad/min  
 B) 7.5 rad/min  
 C) 8.2 rad/min  
 D) 8.8 rad/min  
 E) 9.2 rad/min

**10** A bicycle tire with a 16-inch radius has an angular speed of  $328\pi$  radians per minute. Find the linear speed of the tire in feet per second. Round to the nearest tenth.

A) 22.9 ft/s  
 B) 25.3 ft/s  
 C) 27.7 ft/s  
 D) 30.1 ft/s  
 E) 32.4 ft/s

*new best friends  
 raising money for charity  
 on a date  
 setting a new world record  
 skipping school*



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# CIRCULAR MOTION

*(Linear & Angular Speed)*

## MATH LIB ACTIVITY

*Created by:* ALL THINGS ALGEBRA®

# LINEAR & ANGULAR SPEED

## "Math Lib" Activity!

**Objective:** Students will practice finding linear and angular speed with this "Math Lib" activity. Questions include: finding linear speed given diameter/radius/circumference and rotations per minute (rpm), find angular speed given rotations per minute, find angular speed given diameter and linear speed, find rpm given linear speed, find the rpm in a double-pulley problem given the rpm of one of the pulleys, and find the linear speed given the angular speed and radius.

**Activity Directions:** Print and post the ten stations around the room. Give each student the worksheet to record their work as they travel to the stations. Group students (I typically do groups of 3) and assign to a starting problem. Set the timer for 3:30 minutes (more if needed). Students solve the problem at the station, then look for their answer and record the piece to the story. When the timer goes off, they move to the next station.

You are able to edit each slide to change the teacher name and all story elements to personalize for your students. PowerPoint is required to edit the slides. They enjoy seeing which one of their teachers is the "star" of the story!



**10 Stations & Student Worksheet Included**  
**You can change ALL story elements!**