

Name \_\_\_\_\_

PreCalc – Applications of Linear Speed, Angular Speed and Area of a Sector of a Circle

1. Michelangelo can swing his nun chucks at a rate of 650 revolutions per minute (rpm). The nun chucks have a radius of 1 foot. Donatello can spin his staff at a rate of 300 revolutions per minute (rpm). Donatello's staff has a radius of 3 feet. Compare the linear speed (in mph) of the edge of each weapon.



2. Mike lifts the rear tires of his 1966 Mustang so that it looks cooler.

The rear tires will now have a diameter of 24 inches, while the front tires will remain at a diameter of 20 inches.

If Mike drives the Mustang at a rate of speed of 80 mph, find the revolutions per minute (rpm) of both the front and rear tires.



3. Kevin rigs an oscillating fan to blow feathers into a burglar's face. The fan is capable of sending feathers 20 feet in any direction, and the fan is set to oscillate at 40 degrees. Find the area in square feet that will be covered with feathers.



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