**Supplementary Activities**

**Unit 5 Investigation 3**

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| **Definition of Radian**  Open the file: <http://tube.geogebra.org/material/simple/id/2131221>  One unit of angle or arc measure that you're probably familiar with is that of a "degree.” Another unit of angle or arc measure is a "revolution". 1 revolution = 360 degrees. Well, there is another unit of angle or arc measure with which you'll soon become familiar. This new unit of angle or arc measure is called a **radian**.  *Interact with the applet below for a few minutes. Reset it a few times and start the animation again each time. Be sure to change the circle's radius as you go along.* ***After interacting with this applet, complete the definition:***  **1 radian is defined to be a unit of arc measure, for which \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**  **Definition of Pi (π)** |

1. Open the file: <http://tube.geogebra.org/material/simple/id/2152059>

After viewing the animation fill in the blanks in the sentence below.

Pi is the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that fit around the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2. Open the file: <http://tube.geogebra.org/material/simple/id/2165713>

Run the animation and then answer these questions:

1. Write a formula for the circumference of a circle in terms of its radius.
2. If π is the number of diameters one can wrap once around a circle, how many radii can be wrapped around the same circle?
3. Rewrite your formula in (a) by expressing the circumference of a circle in terms of both its radius(*r*) and π.

3. Open the file: <http://tube.geogebra.org/material/simple/id/2888187>

Run the animation and then answer this question: If the radius of the wheel is *r*, how far does the wheel travel in one revolution?