Answer the following questions on a separate sheet of paper.
Draw and label diagrams for almost everything.

Recall that the circumference of a circle of radius r is given by the formula $C = 2\pi r$

1. What is the circumference of a circle of radius 1?

2. What is the distance half way around a circle of radius 1?

3. If 360° is a full rotation, what fraction of a full rotation is 60°?

4. If a full rotation is 2π, what fraction of a rotation is $3\pi/4$?

5. What is the circumference of a bike tire with a radius measuring 60 cm?

6. If the bike tire from before makes a full rotation every 2 seconds, how fast is an ant traveling on the edge of the tire?

7. How far does the ant travel in 0.75 seconds?

8. What angle (degrees) has the ant swept through in 0.75 seconds? (Hint: Use the previous questions and a proportion)

9. What angle (radians) has the ant swept through in 0.75 seconds?

10. Convert 35 rpm (rotations per minute) to degrees per second.

11. Convert 18π radians per second to rpm.

12. How fast is an ant traveling on a tire of radius 60 cm rotating at 100° per second?

13. How fast is an ant traveling on a tire of radius 80 cm rotating at 100° per second?

14. Write, in a few sentences or more, what you have learned from these questions. Focus on the questions about the ant. Use the key terms *angular velocity* and *linear velocity*. (See Ch. 8 in the book)