Name: _____ **Date:** _____ **Class:** _____

Post-Activity Worksheet

A robot called Nemo has 2.5-inch wheels and a robot named Wall-E has 3.5-inch wheels. The motors of both robots have the same RPM (revolutions per minute). Both robots drive forward for 1 minute.

1. Which of the following is true?
   a. Wall-E will go farther than Nemo.
   b. Nemo will go farther than Wall-E.
   c. Both travel the same distance.
2. Which robot will have a greater linear velocity?
   a. Wall-E
   b. Nemo
   c. Both have the same linear velocity.
3. Which robot will have a greater angular velocity?
   a. Wall-E
   b. Nemo
   c. Both have the same angular velocity.

For the following questions, the robots have the same wheel diameter as above (2.5-in for Nemo and 3.5-in for Wall-E).

4. Wall-E is driving with an angular velocity of 20 radians/sec. Calculate Wall-E's linear velocity.

5. Nemo is driving with an angular velocity of 20 radians/sec. Calculate Nemo's linear velocity.

6. You want Wall-E and Nemo to end up at the same location. Given their respective wheel sizes, describe how Wall-E and Nemo can drive to end up at the same location.

7. *Think outside of the box!* Why do different vehicles—tractors, trucks, sports cars and SUVs—have different wheel sizes? What wheel size would you want on your vehicle and why?