QUIZ / Wheel Size Matters - Rotation

NAME　　　　　　　　　　　　　　　　　DATE　　　　　　CLASS PERIOD

Put a check ☒ in the o next to the correct answer.

1. **How does the modified Squarebot differ from the original Squarebot?**
   - o **The modified Squarebot is battery-powered.**
   - o **The power setting for the modified Squarebot was increased.**
   - o **The gears for the front wheels were removed on the modified Squarebot.**
   - o **The front wheels on the modified Squarebot were replaced by larger wheels.**

2. **What is kept constant in this investigation?**
   - o **Wheel size**
   - o **Type of robot**
   - o **The distance the robot travels.**
   - o **Rotations of the motor axles.**

3. **Which variable is the dependent in this investigation?**
   - o **The distance the robot travels**
   - o **Rotations of the motor axles**
   - o **Wheel size**
   - o **Type of robot**

4. **What are systematic errors?**
   - o **Errors that affect data different ways at different times**
   - o **Errors that are caused by human judgments**
   - o **Errors that we are unable to detect**
   - o **Errors that always affect data the same way**

5. **What are random errors?**
   - o **Errors that always affect data the same way**
   - o **Errors that are caused by human judgments**
   - o **Errors that affect data different ways at different times**
   - o **Errors that we are unable to detect**

6. **Which of the following would most likely be a systematic error?**
   - o **Measuring the distance the robot travels**
   - o **Friction**
   - o **Wheel slippage**
   - o **None of the above, since they are all random**

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7. Interpolation of data values means predicting a new value

     o **between existing values**

     o **beyond existing values**

     o **from a new data set**

     o **none of the above**

8. Extrapolation of data values means predicting a new value

     o **between existing values**

     o **from a new data set**

     o **beyond existing values**

     o **none of the above**

9. Given the following five distances measured in inches, calculate the average distance: 43.8in., 47.2 in., 41.1 in., 44.5 in., 42.6 in.

     o **219.2 in.**

     o **43.84 in.**

     o **45.9 in.**

     o **42.6 in.**

10. Convert 47.8 in. to centimeters.

     o **18.8 cm.**

     o **12.1 cm.**

     o **188.1 cm.**

     o **121.4 cm.**

11. Given the plot shown below (Figure 1), about how far would a wheel with a diameter of 7in. travel in five rotations?

     o **40 in.**

     o **55 in.**

     o **70 in.**

     o **100 in.**

12. Given the plot shown below (Figure 1), what is the approximate diameter of a wheel that traveled 110in. in five rotations?

     o **17 in.**

     o **13 in.**

     o **7 in.**

     o **110 in.**

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Figure 1: 5 Rotations