Name: _____   **Date:** _____

Rotary Encoders & Human-Computer Interaction —
Results and Analysis Worksheet

1. In your experimentation with the LEGO rotary encoder, did your predicted angles match up with the computer angles? Do you think the numbers should match up? Explain.

   _____

   _____

2. After graphing pixels vs. length from your experiments, what is the relation between the amount of pixels moved on the screen for a given length traveled on paper?

   _____

3. Explain what a rotary encoder is.

   _____

   _____

4. List some examples of devices that have rotary encoders:
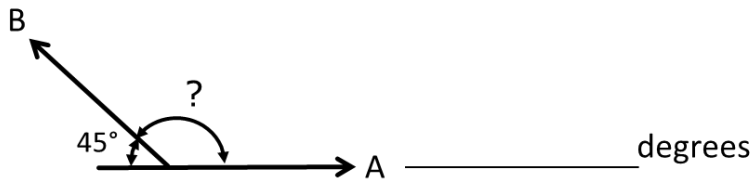
   _____

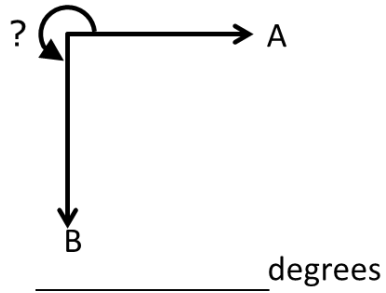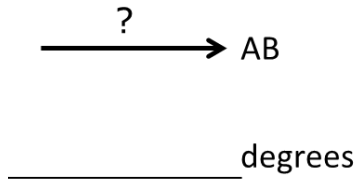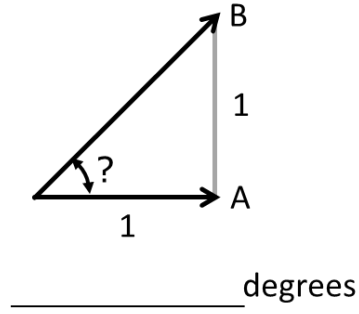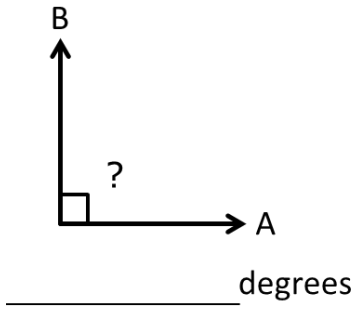5. Briefly explain how a rotary encoder works.

   _____

6. Did the robotics (LEGO EV3) setup help you better understand a rotary encoder? Explain your answer.

   _____

   _____

7. How familiar are you with the topic of angles, after this activity? Rate from 1 (not familiar) to 10 (very familiar) _____

8. What do you think is the angle shown in each picture? (Write the answer in degrees)

B

? ⊾

A

_____ degrees

B

1

? A

1

_____ degrees

?

→ AB

_____ degrees

? ↻ → A

↓

B

_____ degrees

B

?

45°

A

_____ degrees

9. Would the rotary encoder work for any other shapes, such as a square?

_____

_____

10. How do you think rotary encoders are applied in elevators and fans? (Hint: Rotary encoders were used to relate rotation to distance in the computer mouse and rotation to angles in the LEGO device.)

_____

_____