

Mission 13 - Going the Distance **Review Questions**

<p>What code will read a wheel encoder?</p>	<ul style="list-style-type: none"> a. <code>val = enc.read(True)</code> b. <code>val = read.enc(0)</code> c. <code>val = enc.read(LEFT)</code> d. <code>enc.read(val)</code>
<p>What value is returned by the wheel encoder?</p>	<ul style="list-style-type: none"> a. A Boolean: True or False b. An integer from -32767 to +32768 c. A float from -32767 to +32768 d. An integer from 0 to 4095
<p>Which statement is True?</p>	<ul style="list-style-type: none"> a. <code>5 / 3 == 5 // 3</code> b. <code>5 // 3 > 1</code> c. <code>5 // 3 == 2</code> d. <code>5 // 3 < 5 / 3</code>
<p>Why does this code throw an error?</p> <pre>n = val/100 print(val, n * '*')</pre>	<ul style="list-style-type: none"> a. You can't divide val by 100 b. You can't multiply a string by a float c. You can't multiply a string with a number d. You can't print a number and then a string
<p>Given this code, what will print?</p> <pre>message = '#' * 5 print(message)</pre>	<ul style="list-style-type: none"> a. ##### b. '#' * 5 c. 'message' d. An error will occur
<p>The code is an example of:</p> <pre>count += 1</pre>	<ul style="list-style-type: none"> a. Cascaded assignment b. Augmented assignment c. Formatted output d. Feedback loop
<p>What is printed by the following code?</p> <pre>count = 3 count += 1 count *= 2 print(count)</pre>	<ul style="list-style-type: none"> a. 4 b. 8 c. 2 d. 3
<p>What does this code do?</p> <pre>was_slot = False val = enc.read(LEFT) is_slot = val > SLOT_THRESHOLD if is_slot != was_slot: count += 1 was_slot = is_slot</pre>	<ul style="list-style-type: none"> a. Reads the encoder everytime there is a new slot b. When a new slot is found, it increments the counter c. When a reading is different, it increments count and flips is_slot d. When the reading is the same, it increments count and flips is_slot
<p>What does this code do?</p> <pre>cm * (COUNTS_PER_REV / WHEEL_CIRC_CM)</pre>	<ul style="list-style-type: none"> a. Converts counts to centimeters b. Converts centimeters to counts c. Calculates the track circumference d. Calculates the speed
<p>What does this code do?</p> <pre>counts * WHEEL_CIRC_CM / COUNTS_PER_REV</pre>	<ul style="list-style-type: none"> a. Converts counts to centimeters b. Converts centimeters to counts c. Calculates the track circumference d. Calculates the speed

<p>What does this code do?</p> <pre>round(dist_cm / tm_sec)</pre>	<ul style="list-style-type: none"> a. Converts counts to centimeters b. Converts centimeters to counts c. Calculates the track circumference d. Calculates the speed
<p>What powers are used to rotate the CodeBot clockwise?</p>	<ul style="list-style-type: none"> a. LEFT and RIGHT are both negative b. LEFT is negative and RIGHT is positive c. LEFT is positive and RIGHT is negative d. Both positive, but LEFT is more than RIGHT
<p>Which of the following is FALSE?</p>	<ul style="list-style-type: none"> a. $\text{abs}(-5) / 5 == 1$ b. $-5 / \text{abs}(-5) == 1$ c. $5 / \text{abs}(-5) == 1$ d. $-5 / \text{abs}(5) == -1$
<p>What is printed by the following code:</p> <pre>print(f'{math.pi:.2f}')</pre>	<ul style="list-style-type: none"> a. 3.14 b. 3.142 c. 03.14 d. math.pi
<p>How much time passes before the loop breaks?</p> <pre>tm = ticks_ms() + 500 while True: if ticks_ms() > tm: break</pre>	<ul style="list-style-type: none"> a. 1 second b. 1/2 second c. 1 millisecond d. 5 milliseconds
<p>In the feedback loop for cruise control, the input is:</p>	<ul style="list-style-type: none"> a. cur_speed b. target_speed c. ratio d. count
<p>In the feedback loop for cruise control, the output is:</p>	<ul style="list-style-type: none"> a. cur_speed b. target_speed c. ratio d. count
<p>In the feedback loop for cruise control, the feedback comes from:</p>	<ul style="list-style-type: none"> a. The wheels b. The motors c. The wheel encoders d. Line sensors
<p>In the feedback loop for cruise control, the system is:</p>	<ul style="list-style-type: none"> a. The wheel encoders b. The line sensors c. The CodeBot d. The motors
<p>What does this code do?</p> <pre>err = target_speed - cur_speed power += err * Kp motors.run(LEFT, power) motors.run(RIGHT, power)</pre>	<ul style="list-style-type: none"> a. Causes the CodeBot to brake b. Causes the CodeBot to move forward c. Calculates the speed for CodeBot d. Provides constant feedback when in a loop