Robotics Programming practice Quiz 2/29/2016 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Matching (1 point each)

1. \_\_D\_\_ motor[] a) A construct use when you want to execute a section of code

only when a condition is true.

1. \_\_F\_\_ wait1Msec() b) Something that results is a true or a false.
2. \_\_H\_\_SensorValue[] c) Something that can be used to calculate the distance a robot

will travel.

1. \_I\_\_\_while d) Used to select where so send power.
2. \_A\_\_\_if e) Used to declare an integer type variable.
3. \_K\_\_\_else f) Has the program delay for a certain amount of time.
4. \_B\_\_\_Condition g) Used to connect two conditions such that the result is true

only if both conditions are true.

1. \_\_G\_\_&& h) Used to find the current value of a sensor.
2. \_\_J\_\_|| i) Used when you want to repeat a section of code.
3. \_\_C\_\_Shaft Encoder j) Used to connect two conditions such that the result is true

If either or both conditions are true.

1. \_E\_\_\_int k) Used to define a section of code that is executed when a

condition is false.

Short Answer (2 points each)

 Evaluate the following:

1. (10<8) \_\_\_\_FALSE\_\_\_\_\_
2. (14>6) || (12<10) \_\_\_TRUE\_\_\_\_\_\_
3. (14>6) && (12<10)\_\_\_\_FALSE\_\_\_\_

Sketch the path of a robot that the robot takes that completes the following code. Include dimensions. (5 Points)

 Notes: The wheels are 2.75” in diameter.

 When the motors are turning in opposite directions, the robot turns 1 degree for every 4 ticks.

 (1 bonus point for calculating the distances, if you show your work)



Goes forward for 1260/360 = 3.5 revolutions.

Distance = 3.5 revolutions \*2.75\*3.14 inches/revolution

= 29.7” on each side.

Turns 360/4 = 90 degrees

Completes the path of a square with 29.7” sides and 90 degree turns.

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Coding, on the computer: (10 points)

 Create a robot with the following setup.

 rightMotor: Motor Port 2

 leftMotor: Motor Port 3

 rightEncoder: Digital Port 1

 leftEncoder: Digital Port 3

 Virtual World Challenge:

 Using the VEX Squarebot

 Utility -> Grand Challenge -> **Start at Point A**

 Travel to the ‘Human-Computer Interaction Institute’ (Red circle in the far corner of the

field) **and back** to point ‘A’.

2 Points Extra Credit:

 Travel through the building to get to the ‘Human-Computer Interaction Institute’.

**Demonstrate to Mr. Smith**

Programming (5 Points = 100%)

 \_\_\_ Program compiles (2 points)

 \_\_\_ Header complete with names, description and date (1 points)

 \_\_\_ Code is properly indented (1 points)

 \_\_\_ Comments in the program describing the code (1 points)

Performance

\_\_\_\_ Completed (5 Points)