Automatic Thresholds Quiz

NAME ___________________________ DATE ______________

1. The output of a sensor is always in the form of a:
   a. value.
   b. decimal.
   c. threshold.
   d. frequency.

2. If we want to store a decimal value in a variable named my_variable, then the variable type we select should be a(n) _____________.

3. What does it mean to “declare” a variable?

4. Cross out the names on the following list, which cannot be used as variable names.
   a. true
   b. my_variable
   c. var1x
   d. ants go marching
   e. 1_by_1
   f. one_by_one
   g. motor
   h. PB&J

5. Using the following bit of code, write a line of code that will calculate the value of a times b and store it in the variable “product”. What value will be in “product” after the line is run?

```c
1 int a;
2 int b;
3 int product;
4 a = 10;
5 b = 100;
6```

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6. In the space below, identify all the variables used in the Automatic Thresholds program, and briefly describe what each one does.

```
const tSensors touchSensor = (tSensors) S1;
const tSensors lightSensor = (tSensors) S2;
task main()
{
    int lightValue;
    int darkValue;
    int sumValue;
    int thresholdValue;
    while(SensorValue(touchSensor) == 0)
    {
        nxtDisplayStringAt(0,31,"Read Light Now");
    }
    lightValue = SensorValue(lightSensor);
    wait1Msec(1000);
    while(SensorValue(touchSensor) == 0)
    {
        nxtDisplayStringAt(0,31,"Read Dark Now");
    }
    darkValue = SensorValue(lightSensor);
    sumValue = lightValue + darkValue;
    thresholdValue = sumValue/2;
    ClearTimer(T1);
    while(time1[T1] < 3000)
    {
        if(SensorValue(lightSensor) < thresholdValue)
        {
            motor[motorC] = 0;
            motor[motorB] = 80;
        }
        else
        {
            motor[motorC] = 80;
            motor[motorB] = 0;
        }
    }
    motor[motorC] = 0;
    motor[motorB] = 0;
}```