

Names:

Period: _____

Advanced Robotics

Midwood High School

Motors and Timing Tasks – Constants and Variables

Directions: Make your robot perform the following tasks *in order* and show each task to Reilly to get it initialed. Each person in the group must create two programs.

Programmer: _____

1. _____ Make a rectangular shape that has a long side about 1.5 feet long and a short side about 1 foot long. *Use all constants* so that the dimensions can be easily adjusted. *Include comments.*
2. _____ Go forward at power level 0, then increase the power level by 1 every .5 seconds until at full power. Then, go reverse, decreasing the power level by 1 every .5 seconds until at minimum power, and stop. (Hint: Use variables)

Programmer: _____

3. _____ Make the shape of a square and repeat “forever,” but the size of the square should be random each time.
4. _____ Make four rectangles that spiral inward (a similar example was discussed in the Constants and Variable lesson). The first rectangle should be 4 seconds on the long side and 3 seconds on the short side. Each subsequent one should be .5 seconds less on each side.

Programmer: _____

5. _____ Go forward for about 10 cm, make a 180° turn, and repeat this process 10 times going slightly longer distances each time.
6. _____ Write a program that starts the motors at full power and the lamp at minimum power. Every second, the power level of the motors will decrease by 1 and the power level of the lamp will increase by 1. When the motors reach minimum power and the lamp reaches full power, turn off the motors and lamp.