Name:
**Intro to Computer Science: REVIEW- Unit 8**

_____

1. On the Castle Playground image, draw out the sequence of what this code will look like on the playground.

```python
def castle():
    while not front_eye.near_object():
        drivetrain.drive(FORWARD)
        wait(5, MSEC)
    drivetrain.stop()
    magnet.energize(DROP)
    drivetrain.turn_for(LEFT,180,DEGREES)
    drivetrain.drive_for(FORWARD, 300, MM)
    drivetrain.turn_to_heading(270,DEGREES)

def main():
    drivetrain.drive_for(FORWARD,700,MM)
    drivetrain.turn_for(LEFT, 90, DEGREES)

    for i in range(2):
        while not down_eye.near_object():
            drivetrain.drive(FORWARD)
            wait(5, MSEC)
        drivetrain.stop()
        magnet.energize(BOOST)
        drivetrain.turn_to_heading(90, DEGREES)
        drivetrain.drive_for(FORWARD, 400, MM)
        drivetrain.turn_for(LEFT, 90, DEGREES)
        castle()

    drivetrain.stop()
```
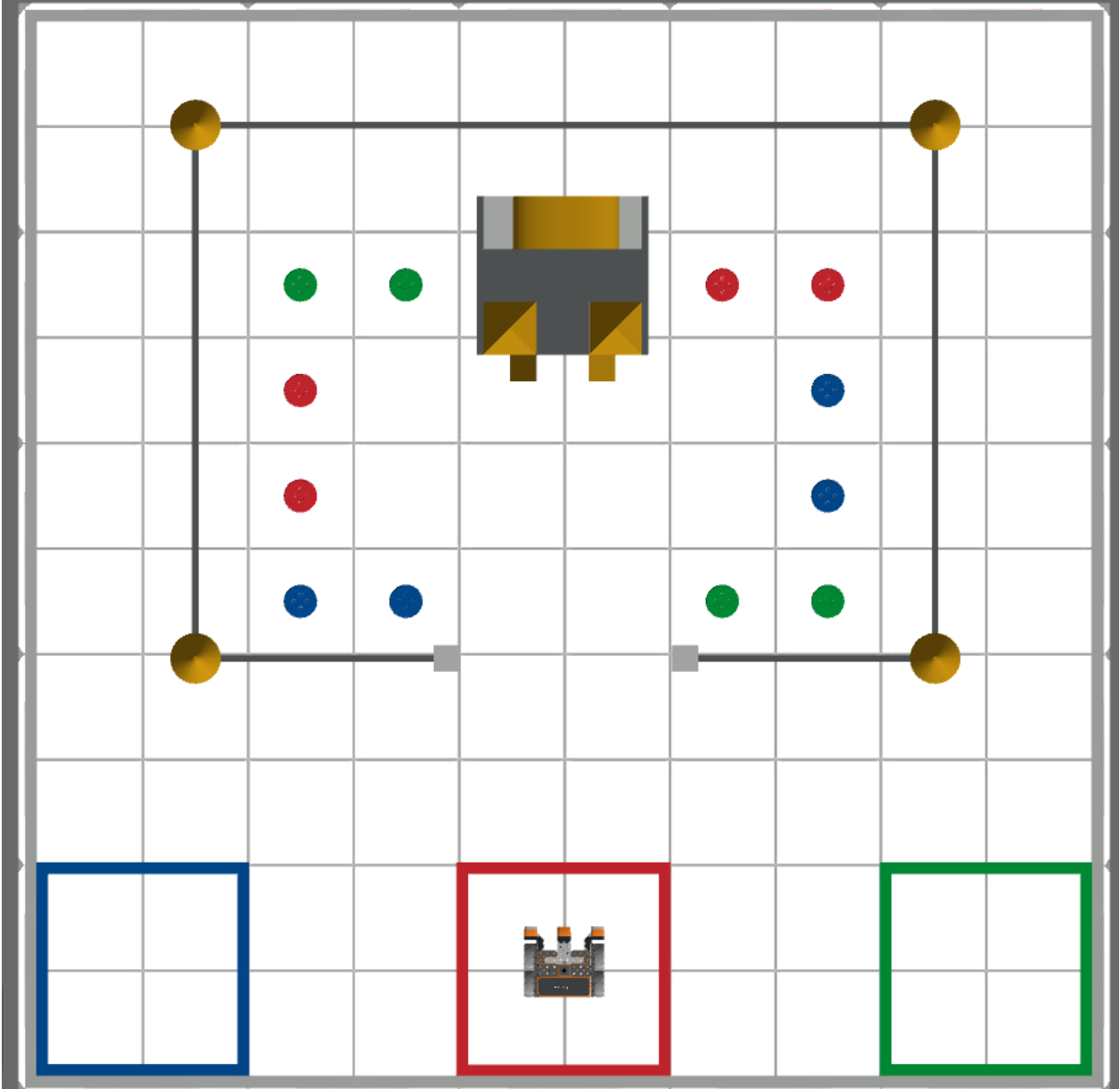
2. If the robot starts in column D, what will this code do? Sketch it on the Playground.

```python
def line_draw(red,green,blue):
    if red:
        pen.set_pen_color(RED)
        pen.move(DOWN)
        while not down_eye.detect(GREEN) and not down_eye.detect(BLUE):
            drivetrain.drive(FORWARD)
            wait(5,MSEC)
        drivetrain.stop()
        pen.move(UP)
    if green:
        pen.set_pen_color(GREEN)
        pen.move(DOWN)
        while not down_eye.detect(BLUE) and not down_eye.detect(RED):
            drivetrain.drive(FORWARD)
            wait(5,MSEC)
        drivetrain.stop()
        pen.move(UP)
    if blue:
        pen.set_pen_color(BLUE)
        pen.move(DOWN)
        while not down_eye.detect(GREEN) and not down_eye.detect(RED):
            drivetrain.drive(FORWARD)
            wait(5,MSEC)
        drivetrain.stop()
        pen.move(UP)


def main():
    while not down_eye.detect(RED):
        pen.move(UP)
        drivetrain.drive(FORWARD)
        wait(5,MSEC)
    drivetrain.stop()
    line_draw(True,False,False)
    line_draw(False,True,False)
    pen.move(DOWN)
    drivetrain.drive_for(FORWARD,50,MM)
    line_draw(False,False,True)
    drivetrain.stop()

# VR threads — Do not delete
vr_thread(main)
```

3. The robot must drive to each disc, pick it up and return it to the starting point, however, you must code it using the following:

      Create a procedure for red,green,blue.
      If it senses green, code it picking it up and bringing it back.
      If it senses blue, code picking it up and bringing it back.
      If it senses red, code it picking it up and bringing it back.

      Drives until is sensing something from the down.eye sensor.
      Run the red,green,blue procedure in the main program everytime a disc is sensed.