

```
When started
  set drive heading to 270 degrees
  set up Speed 100
  55 point auton
```

```
define 55 point auton
  spin ArmMotor to down
  Move To X: 40 Y: 38
  Turn to: 90
  spin IntakeMotor to position 180 + 8 degrees
  Put ball into goal 5
  Move To X: -52 Y: 38
  spin IntakeMotor intake for 80 degrees
  Turn to: 115
  Put ball into goal 5
  Move To X: -14 Y: 38
  Turn to: 115
  spin IntakeMotor intake for 80 degrees
  Move To X: 12 Y: 36
  Move To X: 24 Y: 38
  Turn to: 90
  Put ball into goal 5
  Grab a ball to goal 10 23
  Grab a ball to goal 8 0
  Grab a ball to goal -10 2
  Grab a ball to goal 8 24
  Grab ball from under bar 58
  Grab ball from under bar -55
  Match Load Long Cycle
  Match Load Long Cycle
  spin IntakeMotor outtake
  drive reverse
  spin ArmMotor up
```

```
define Move To X: X Y: Y
  Using GPS to make precise movements
  set x to GPS position X in inches
  set y to GPS position Y in inches
  set tarX to X - x
  set tarY to Y - y
  set tarTheta to atan2 of X tarX Y tarY
  set dist to sqrt of tarX * tarX + tarY * tarY
  turn to heading tarTheta degrees
  drive forward for dist inches
```

```
define Put ball into goal number
  drive forward for number inches and don't wait
  spin IntakeMotor outtake for 50 + number degrees
  drive reverse for number inches
```

```
define Grab a ball to goal X Y
  spin ArmMotor to position 180 + 8 degrees and don't wait
  Move To X: X Y: Y
  spin ArmMotor to position 180 + 8 degrees and don't wait
  Turn to: 180
  spin IntakeMotor intake for 90 degrees
  Move To X: 36 Y: Y / 2.5
  Turn to: 0
  Put ball into goal 5
```

```
define Turn to: number
  turn to heading 0 - number degrees
```

```
define Get triBall from goal
  spin ArmMotor to position 150 + 8 degrees and don't wait
  Move To X: -54 Y: -54
  spin ArmMotor to position 180 + 8 degrees and don't wait
  Turn to: 225
  spin IntakeMotor intake for 80 degrees
```

```
define Set up Speed speed
  set drive velocity to speed %
  set turn velocity to speed %
  spin ArmMotor velocity to speed %
  set IntakeMotor velocity to speed %
```

```
define Grab ball from under bar
  Move reverse to: 36 Y: 635
  Move To X: 12 Y: Y
  spin IntakeMotor intake for 90 degrees
  spin ArmMotor to position 140 + 8 degrees and don't wait
  Move To X: 36 Y: Y
  spin ArmMotor to position 180 + 8 degrees and don't wait
  Move To X: 36 Y: Y / 4
  Turn to: 0
  Put ball into goal 5
```

```
define Match Load Short Cycle
  Move To X: 44 Y: 50
  Get triBall from goal
  spin ArmMotor to position 45 + 8 degrees and don't wait
  Turn to: 30
  set IntakeMotor velocity to 100 %
  spin IntakeMotor outtake for 360 degrees
  set IntakeMotor velocity to 50 %
  spin ArmMotor to position 180 + 8 degrees and don't wait
```

```
Up
  spin ArmMotor to position 0 degrees
  Down
  spin ArmMotor to position 180 + 8 degrees
```

```
spin IntakeMotor intake for 90 degrees
```

```
define Move reverse to: X Y
  Using GPS to make precise movements
  set x to GPS position X in inches
  set y to GPS position Y in inches
  set tarX to X - x
  set tarY to Y - y
  set tarTheta to atan2 of X tarX Y tarY
  set dist to sqrt of tarX * tarX + tarY * tarY
  turn to heading tarTheta degrees
  drive reverse for dist inches
```

```
define Match Load Long Cycle
  Move To X: 44 Y: 50
  Get triBall from goal
  Move To X: 12 Y: 20
  Move To X: 25 Y: 18
  Turn to: 0
  Put ball into goal 5
```

```
spin IntakeMotor outtake
  drive reverse
  spin ArmMotor up
```