**MIDPOINT ELLIPSE DRAWING ALGORITHM**

**Initialization**:

* Set the initial values of x = 0, y = ry.
* Compute the initial decision parameter p1 for region 1.

**Region 1** (for ellipse when 2 \* ry^2 \* x <= 2 \* rx^2 \* y):

* Draw points in all four quadrants using symmetry: (x + xc, y + yc), (-x + xc, y + yc), (x + xc, -y + yc), and (-x + xc, -y + yc).
* If the decision parameter p1 < 0, move to the right (increment x), otherwise, move diagonally (increment x and decrement y).
* Update the decision parameter accordingly.

**Region 2** (for ellipse when y >= 0):

* Compute the initial decision parameter p2.
* Draw points in all four quadrants similarly as in region 1.
* If p2 > 0, move down (decrement y), otherwise, move diagonally (increment x and decrement y).
* Update the decision parameter accordingly.

**Plotting**:

* After computing the points, plot them using matplotlib.