Algorithm for Midpoint Circle Drawing

Step 1:

Input the radius and center coordinates of the circle:
- r (radius)
- xc, yc (center coordinates)

Step 2:

Initialize variables:
- x = 0 (starting x-coordinate)
- y = r (starting y-coordinate)
- p = 1 - r (initial decision parameter)

Step 3:

Initialize lists to store circle points:
- xes = [ ] (list for x-coordinates)
- yes = [ ] (list for y-coordinates)

Step 4:

Plot the initial set of points by calling the `points_plot` function with inputs:
- xes, yes, x, y, xc, yc

This function calculates and stores 8 symmetric points for the current (x, y).

Step 5:

Iterate while x < y:
- Increment x by 1.
- Check the decision parameter (p):
  - If p < 0, update p as p = p + 2 * x + 1.
  - Otherwise, decrement y by 1 and update p as p = p + 2 * (x - y) + 1.
- Call `points_plot` to calculate and store the new set of circle points.

Step 6:

After exiting the loop, use `matplotlib` to visualize the circle:
- Plot the points stored in `xes` and `yes` using `plt.scatter`.
- Add a grid using `plt.grid(True)`.
- Display the plot using `plt.show()`.

Step 7:

End the program.