Midpoint Ellipse Algorithm:

Step 1: Start the algorithm.

Step 2:Input the semi-major axis (a) and semi-minor axis (b) of the ellipse.

Step 3:Initialize x = 0 and y = b.

Step 4:Calculate the initial decision parameter for Region 1:

$p1 = b^2 - a^2b + (a^2 / 4)$.

For Region 1 (while $2b^2x \leq 2a^2y$):

a) Plot the points (±x, ±y) using ellipse symmetry.

b) If $p1 < 0$:

i) $x = x + 1$

ii) $p1 = p1 + 2b^2x + b^2$

c) Else:

i) $x = x + 1$

ii) $y = y - 1$

iii) $p1 = p1 + 2b^2x - 2a^2y + b^2$

Step 5:Calculate the decision parameter for Region 2:

$p2 = b^2(x + 0.5)^2 + a^2(y - 1)^2 - a^2b^2$.

For Region 2 (while $y \geq 0$):

a) Plot the points (±x, ±y) using ellipse symmetry.

b) If $p2 > 0$:

i) $y = y - 1$

ii) $p2 = p2 - 2a^2y + a^2$

c) Else:

i) $x = x + 1$

ii) $y = y - 1$

iii) $p2 = p2 + 2b^2x - 2a^2y + a^2$

Step 6:Stop the algorithm.