

Computer Graphics Lab

Lab 2 Manual

[You need to submit your source files for Task 1 and Task 2. Also, you'll need to submit a report in .txt format where you will mention the coordinates of the points in Task 1 and Task 2. Also, mention which approach you took for Task 2.

Write Task 3 in the report.

Don't zip the files, just add and hand in the assignment. Name the source file mentioning your registration number.

*** Provide screenshots also of your output for Task 1 and Task 2]*

Task 1:

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The equation of the circle is:

$$\left(x - \frac{3}{2}\right)^2 + \left(y - \frac{7}{2}\right)^2 = 43$$

Use Bresenham's Circle Algorithm to plot the circle.

[Hint: Look at the coordinates of the center of the circle. Do you recall anything about translation?]

Task 2:

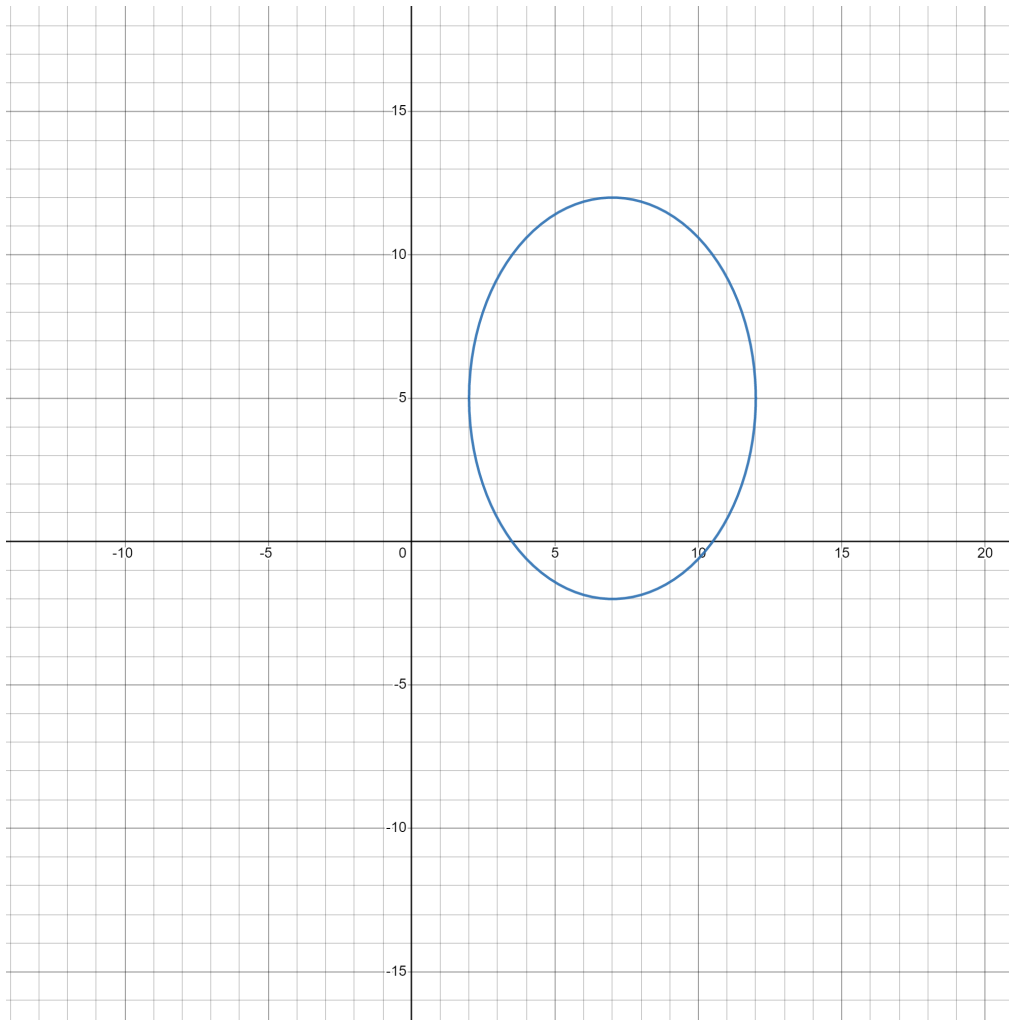
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Let's assume, we have an equation for ellipse like below:

$$\frac{(x-7)^2}{5^2} + \frac{(y-5)^2}{7^2} = 1$$

Plot this using the Midpoint Ellipse algorithm.

A graph is given for your convenience of the function:



Option 1:

[Hint: Always remember, when you mirror any function against $x=y$ line, you'll get the inverse function of that function, which is equivalent to, replacing X with Y and Y with X , where $X = (x+h)$, $Y = (y+k)$]

Option 2:

[Hint: You may deduct the formula for this ellipse thinking about how x and y changes throughout the domain from $(0,b)$ to $(a,0)$ following the procedure mentioned in our textbook]

Task 3:

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Can the code for the Midpoint ellipse be used for the Midpoint circle algorithm also? Why or why not?