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Problems

Cohen-Sutherland Algorithm

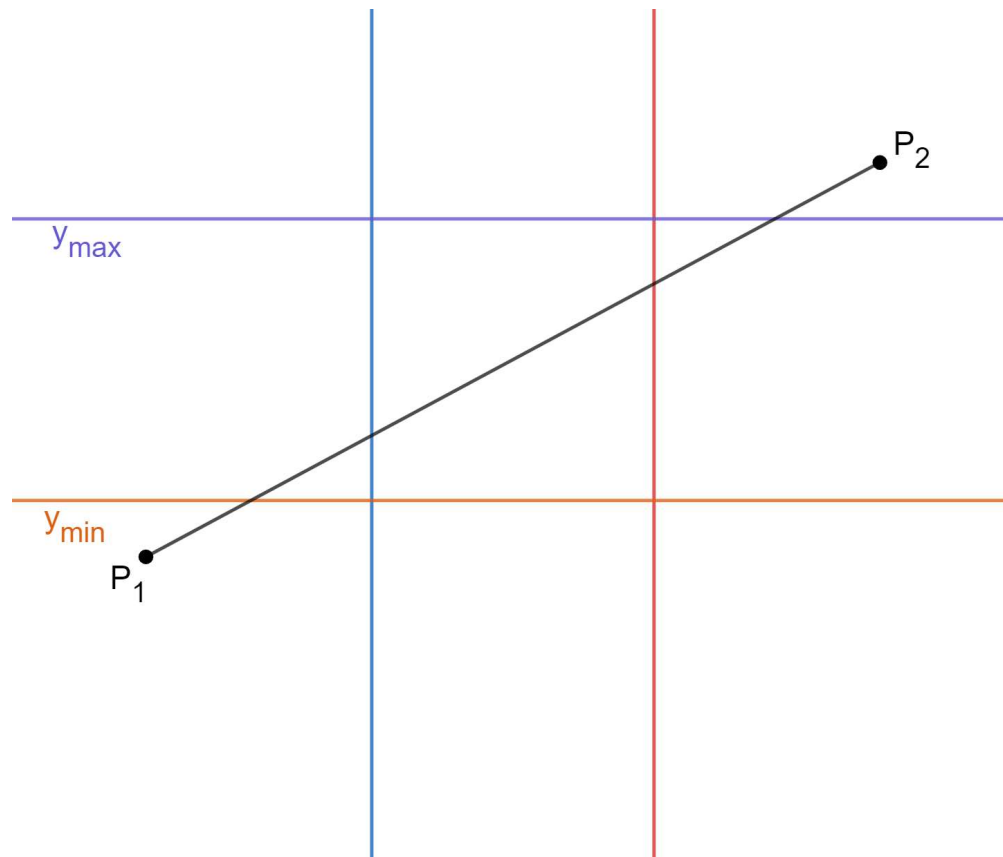

10.0 points possible (graded, results hidden)

(Note: if the math equations and the text below are overlapping, click twice on the piece of math that is causing the issue. That should fix it.)

There are five questions here. You have to answer all of them in order to be able to click the submit button down below.

1. In the following figure, if the order of clipping is **TOP, BOTTOM, RIGHT, LEFT**, how many times will the line get clipped?

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2. Which order of clipping should we follow so that, in question 1, the line gets clipped minimum number of times?

☐ **RIGHT, LEFT, BOTTOM, TOP**☐ **BOTTOM, LEFT, TOP, RIGHT**☐ **LEFT, TOP, RIGHT, BOTTOM**

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3. Given $(x_{\min}, y_{\min}) = (-218, -206)$
 $(x_{\max}, y_{\max}) = (86, 96)$ be the clip region. What happens to
 the line from $(270, -205)$ to $(-90, -296)$

☐ Trivially accepted

☐ Rejected after some clipping

☐ Trivially rejected

☐ Accepted after some clipping



4. Let, for a clip region $x_{\min} = -293$, $x_{\max} = 70$ and $y_{\min} = -66$ We have a line from $(-295, -220)$ to $(176, 101)$. Let S be the set of values of y_{\max} such that the line is trivially rejected. What is the smallest number that is larger than any number in S ?

5. Which of the following is false for Cohen-Sutherland Algorithm?

☐ Accepts the lines that are entirely inside the clipping window very quickly (only using outcode)

☐ Works for only axis aligned rectangular clipping windows

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 Sometimes needs repeated clipping

You have used 0 of 5 attempts

Cyrus-Beck Algorithm

10.0 points possible (graded, results hidden)

(Note: if the math equations and the text below are overlapping, click twice on the piece of math that is causing the issue. That should fix it.)

There are five questions here. You have to answer all of them in order to be able to click the submit button down below.

1. Let $(x_{\min}, y_{\min}) = (-122, -63)$ $(x_{\max}, y_{\max}) = (a, 147)$ be a clip region. If a line from $(138, 201)$ to $(98, 141)$ goes through the **Top-Right corner** of the region, what is the value of a ?


☐

2. Given $(x_{\min}, y_{\min}) = (-85, -212)$ $(x_{\max}, y_{\max}) = (269, 32)$ be the clip region and a line from $(340, -289)$ to $(-122, 83)$ Then $t_L - t_E$ \Rightarrow (rounded to 3 decimal places)

☐

3. In question 2, what is the length of the clipped line segment? (rounded to 3 decimal places)

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$r_0 = (15, 25)$ to $r_1 = (50, 50)$ is clipped by this edge, what is the value of t ? (rounded to 5 decimal places)

5. Which of the following is false for Cyrus-Beck Algorithm?

☐ Does not need repeated clipping

☐ Works for convex polygon clipping windows

☐ Runs faster than Cohen-Sutherland if the line is partially inside of the clipping window

☐ Runs faster than Cohen-Sutherland if the line is entirely inside or entirely outside of the clipping window

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