Answer according no. 1 1803012880

i) F. It is function trivially

ii) F. It does n't have accurate specular component

iii) T

iv) T

v) F. When single ray of ligt comes it happens.

vi) F. 0 order geometric and Parametric continuity are similar

vii) T

viii) F It has 3 co ordinates

ix) F. Shape is changeable

x) T.

...(last digit of your NUB ID), 3+ last 8 [redacted] x_{wmax} =

Answer according to Question No. 3 180301280

a) The Phong Components of phong illumination or reflection model using RGB

Model: openGL allows us to break this lights emitted insti intensity into 4 components

* ambient lightning
* specular lightning
* diffuse lightning
* Emission lightning

Ambient light

A surface that is not exposed to direct light may still be lit up by reflections from other nearby objects

Diffuse Reflection:

* surfaces that are rough or grainy tend to reflection in all direction.

* This scattered light is called diffuse reflection
* lambertian surface appears equally bright from all viewing directions

Specular reflections:

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A perfect mirror reflects ~~lai~~ light only in the specular reflection direction.

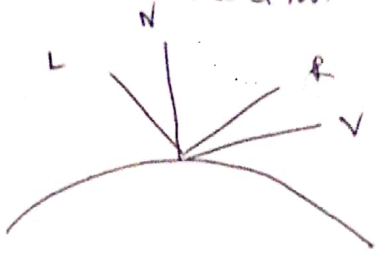
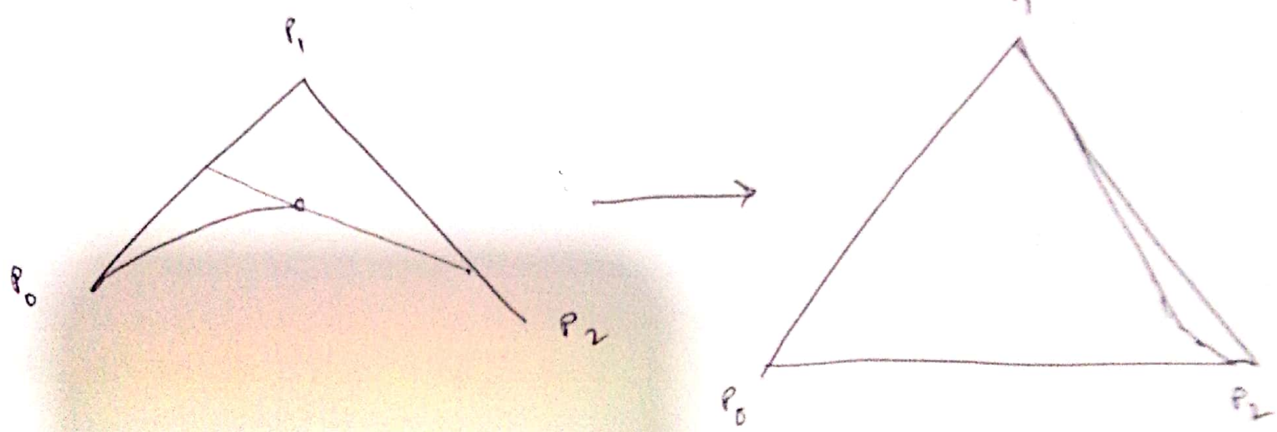
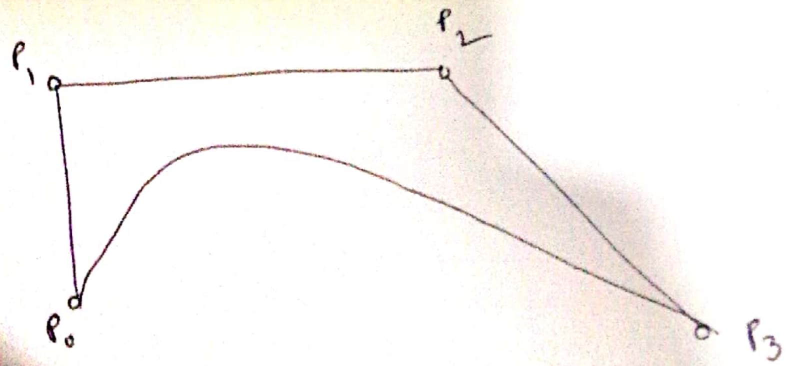


fig: specular reflection.

b)





w_{max} = 10

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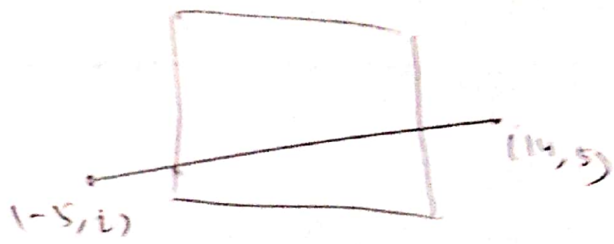
3 a) A = (-5, 2)

B = (14, 5)

boundary given = 12



$x = x_0 + t_{line}(x_1 - x_0)$

$x = x_a + t_{edge}$

$$\begin{array}{r} 0001 \\ 0010 \\ \hline 0000 \end{array}$$

The line is considered clipped case.

Answer according to Question No 4 180301280

b) $Y_{top} = 80$ $Y_s = 20$ $x_{left} = 20$

$Y_4 = 60$ $Y_{bot} = 5$ $x_{right} = 50$

point A = (22, 0)

For green component of A

$$color_{left} = color_1 + (color_4 - color_1) \frac{Y_s - Y_{bot}}{Y_4 - Y_{bott}}$$

$$= 100 + (170 - 100) \frac{20-5}{60-5}$$

$$= 119.09$$

$$color_{right} = color_1 + (color_2 - color_1) \frac{Y_s - Y_{bott}}{Y_{top} - Y_{bot}}$$

$$= 100 + (125 - 100) \frac{20-5}{80-5}$$

$$= 105$$

$$color_x = color_{left} = (color_{right} - color_{left}) \frac{x - x_{left}}{x_{left} - x_{right}}$$

$$= 119.09 - (105 - 109.09) \times \frac{22-20}{20-50}$$

$$= 119.09 + 1.409$$

$$= 120.499.$$

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~~Answer according~~ to Question no 2

(a) Parametric continuity means the smoothness between both the ~~colour~~ curve and of its parameterizations There are 3 types of parametric continuity

(1) Zero order. It means simply that the curves meet, that is the values of x, y and z evaluated at u for the 'let curve section are equal it is also referred to as C^0 continuity

2) First order: means that that let parametric deriavatives (tangent lines) of the co ordination functions defined by $x = x(u)$, $y = y(u)$, $z = z(u)$ and $u_1 < u < u_2$ for 2 successive curves sections are equal at joining points.

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Answer according to Question No 45

b)

Given

(= (-5 + last digit of NUB ID), 3 + last digit of NUB ID))

AND

(15 + last digit of NUB ID , 9 + last digt of NUBID)

$x_{wmax} = 10$

$Y_{wmax} = 10$

(-5, 3) and (15, 9)
A B

Using Liang Barsky we get

$u_{left} = \frac{q_1}{p_1} = \frac{0\,5 - 0}{-(15-5)} = \frac{5}{-10} = -\frac{1}{2}$ u_{min}

$u_{right} = \frac{q_2}{p_2} = \frac{10-5}{15-5} = \frac{5}{10} = \frac{1}{2}$ u_{max}

$u_{bottom} = \frac{q_3}{p_3} = \frac{3 - 0}{-(9-3)} = -\frac{3}{6} = -\frac{1}{2}$

$\left(\frac{Y_0 - Y_{wmin}}{-\Delta y}\right)$

$u_{top} = \frac{q_4}{p_4} = \frac{10-3}{9-3} = \frac{7}{6} = > 0 \times$

$\left(\frac{Y_{wmax} - Y_0}{\Delta y}\right)$

Scanned with CamScanner

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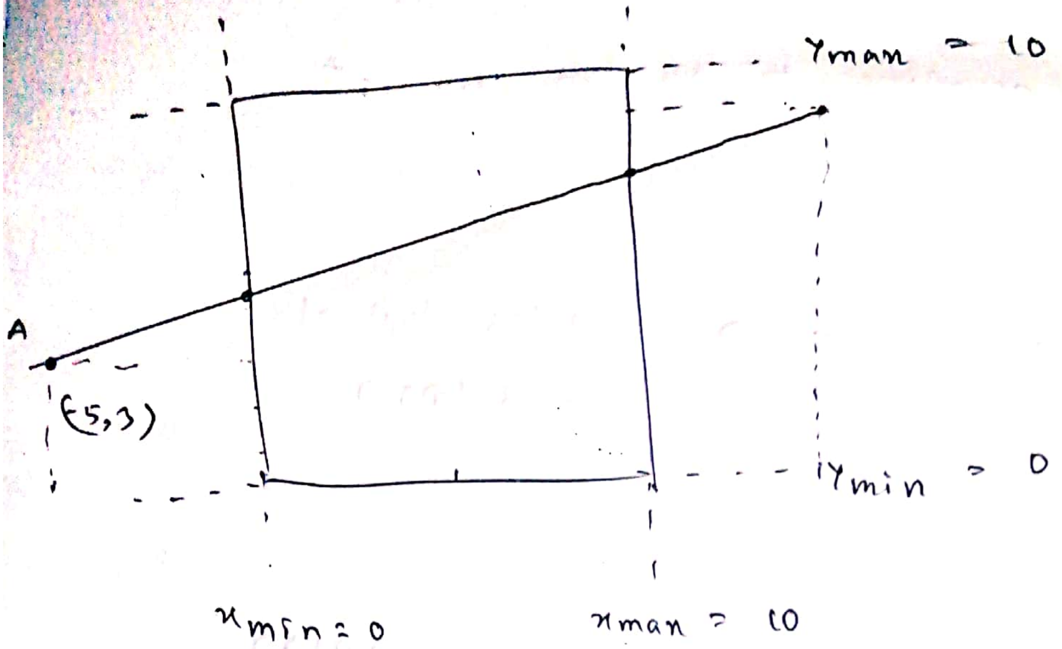

$$\begin{array}{r} 0001 \\ 0010 \\ \hline 0000 \end{array}$$

So the line is concidered to be clipped case

$\boxed{P_{end} - P_0 = (15-5, 9-3) = (10, 6)}$

We have

$u_{min} = -\frac{1}{2}$ and $u_{max} = \frac{1}{2}$

If $u_{min} < u_{max}$, there is a line segment.

So we need to draw a line from

$$(-5 + \overset{10}{\cancel{15}} \times -\tfrac{1}{2},\ 3 + 6 \times -\tfrac{1}{2}) = (-5 - 5,\ 3 + -3)$$

$$= (\overset{-10}{\cancel{0}}, 0)$$

To

$$(-5 + 10 \times \tfrac{1}{2},\ 3 + 6 \times \tfrac{1}{2}) = (0, 6)$$

(b) Several models have been developed ~~using~~ for representing blobby objects as distribution functions over a region of space. One way is to model objects as combination of Gaussian density function.

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One way to do this is to model object as combination of Gaussian density functions. A surface function is defined as

$$f(x, y, z) = \sum_k b_k e^{-a_k r_k^2} - T = 0$$

where $r_k^2 = \sqrt{x_k^2 + y_k^2 + z_k^2}$

Other methods for generating blobby objects use density functions that fall off to 0 in a finite interval, rather than exponentially. The 'metaball' describes composite objects as combinations of quadratics. function of form

$$f(r) = \begin{cases} b(1 - 3r^2/d^2) & \text{if } 0 < r \leq d/3 \\ \frac{3}{2} b (1 - r/d)^2 & \text{if } d/3 < r \leq d \\ 0 & \text{if } r > d \end{cases}$$