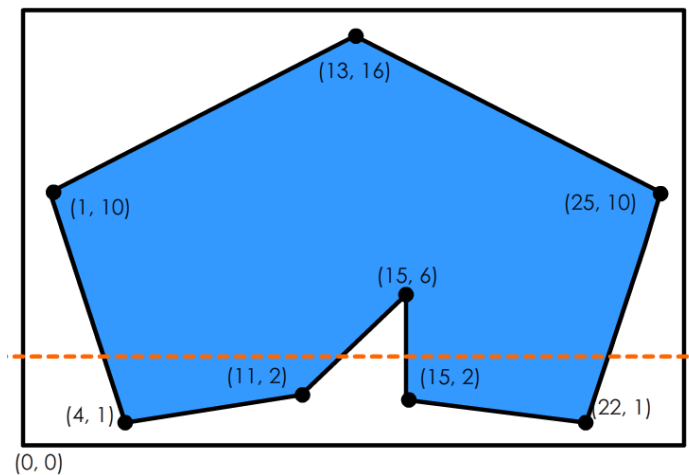
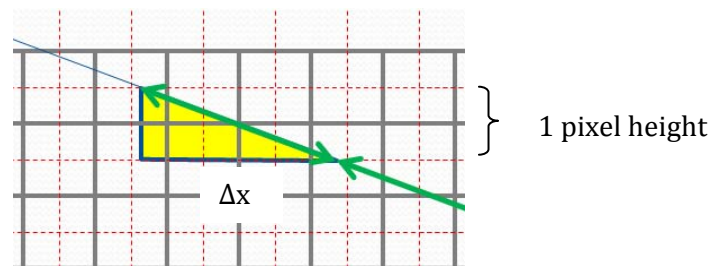


## Question 1: Scan Conversion Algorithm

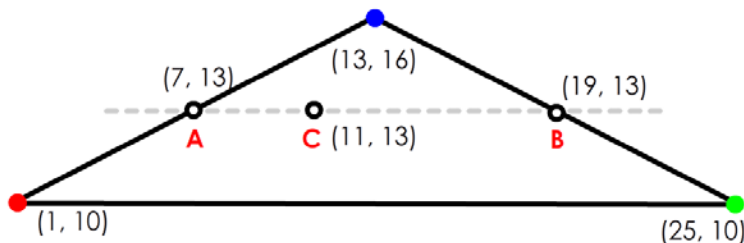


- Sort the vertices in vertical order (from top to bottom) and give the ordering of the vertices.
- Based on your answer in (a), which is the 1<sup>st</sup> scanline to be processed by the algorithm?
- For the 1<sup>st</sup> scanline, give the left most and right most bounds/intersections of the polygon with the scanline
- For the 1<sup>st</sup> scanline, give the left most and right most coordinates of the pixels that needs to be colored
- For the 1<sup>st</sup> scanline, calculate  $\Delta x$  for both of the edges in the scanline.



- Using the  $\Delta x$  values calculated in (d), find the left and right most coordinates for the next 6 scanlines.
- For the scanline highlighted by the dotted line, describe how it can be converted into pixels using the scan-conversion algorithm.

## Question 2: Color interpolation



The above diagram shows a triangle with vertices colored red, green and blue, with RGB value (1, 0, 0), (0, 1, 0) and (0, 0, 1) respectively. Given the coordinates and color information, find the RGB values of the points A, B, and C on the scanline  $y=13$ . (The scanline is supposed to be  $y=13.5$ , I just put it to  $y=13$  for easier calculation)

## Grids to help you draw the pixels

