Let's do problems!!

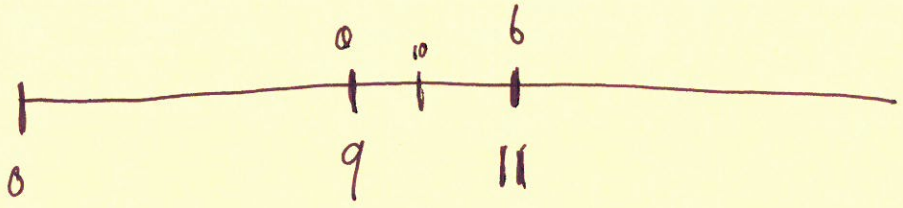
March 6

(1) Give 1 example of when you would use a vector image and 1 example of when you would use a raster.

2) assume I have 2 values

$a = 9 \quad b = 11$

give an formulation to linearly interpolate between a and b and give values at $\frac{1}{4}$, $\frac{1}{2}$ (at paramiterization)



$$9(1-t) + 11t$$

$t = 1/4 \quad 9(3/4) + \frac{11}{4} = 9.5$

$t = 1/2 \quad 9(1/2) + 11/2 = 10$

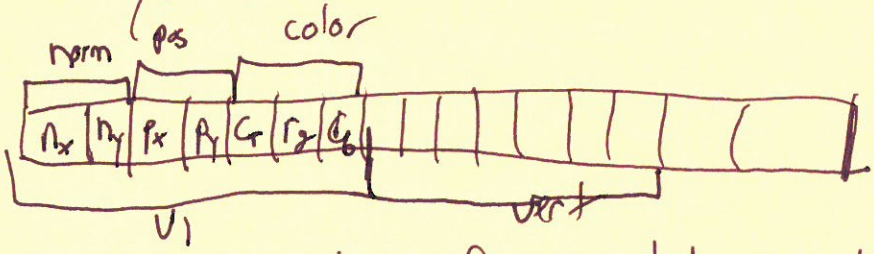
recall the function

glVertexAttribPointer(. . . .)

input into vertex shader to be

```
#version 330 core
layout(location=0) in vec2 aNormal;
layout(location=1) in vec2 aPos;
layout(location=2) in vec3 aColor;
```

(1) sketch a picture of the memory layout



(2) give inputs for glVertexAttribPointer for this interface

Assume that I have a value for the top and bottom of a viewport

$b \leq y \leq t$

I need a trans

$y \in [b, t] \rightarrow y' \in [-1, 1]$

deive the transformation!

$$b \leq y \leq t$$

$$\Leftrightarrow 0 \leq y - b \leq t - b$$

$$\Leftrightarrow 0 \leq \frac{y-b}{t-b} \leq 1$$

$$\Leftrightarrow 0 \leq 2\frac{y-b}{t-b} \leq 2$$

$$\Leftrightarrow -1 \leq 2\frac{y-b}{t-b} - 1 \leq 1$$