Name:

Section:

Follow the instructions in each problem.
Show supporting work, not just a final answer, to receive credit on a problem.

1. (**5 pts**) Dante designs and sells custom UConn eyewear which are a hit at basketball games. Since he is the sole provider, his prices are affected by supply and demand. When he prices the eyewear at $10, he finds he can sell 100 per game. When they are $8, he can sell 120 per game. Assuming a linear demand model, find the demand equation, i.e. find the price $p(x)$ as a function of quantity sold, x.

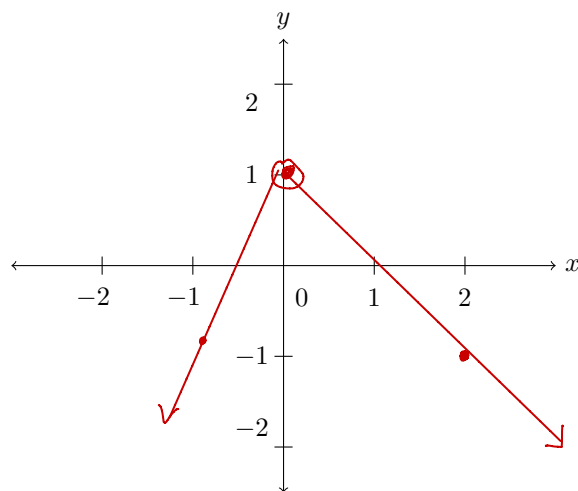| x	$p(x)$
100	10
120	8

$$\text{slope} = \frac{10 - 8}{100 - 120} = \frac{2}{-20} = \frac{-1}{10}$$

$$\Rightarrow P(x) = -\frac{1}{10} x + 20$$

2. (**5 pts**) Sketch a graph of

$$f(x) = \begin{cases} 2x + 1 & x < 0 \\ -x + 1 & x \geq 0 \end{cases}$$

on the axis provided. Is this function continuous on its domain? Why or why not?

Continuous since points match at $x = 0$
(i.e., no gaps, holes, jumps, etc.)