



(d) Graph the Revenue and Cost functions and indicate the break even point on your graph.

2. Dante is inspired by his roommate money making ventures and decides to setup his own shop. He designs and sells custom UConn eyewear which are a hit a basketball games. Since he is the sole provider, his prices are affected by supply and demand.

(a) When he prices the eyewear at \$10, he finds he can sell 120 per game. When they are \$8, he can sell 150 per game. Assuming a linear demand model, find the demand equation.

(b) Dante is willing to spend more time making the eyewear if he knows he will be able to sell it for more. His supply equation is  $p(x) = \frac{1}{10}x$ . Sketch a graph of the supply and demand curves and find the equilibrium point. What is the equilibrium quantity and price?

- (c) UConn Athletics decides they will only allow the eyewear to be sold for \$6. At this price will there be a surplus or a shortage? Of how much?
3. The demand equation for Slushees is  $p = -\frac{x}{10} + 10$  where  $x$  is number of Slushees sold and  $p$  is price per Slushee.
- (a) Find the revenue  $R(x)$  from the sale of  $x$  Slushees.
- (b) Which quantity of Slushees sold produces the highest revenue? What is the cost per Slushee for that quantity? What is the overall revenue?

**More Practice from Textbook 1.2:** You should do as many problems from each set (1-6, 7-10, 11-14, 15-18, 19-22, 23-26, 27-45, 46-60), as needed until you are comfortable with these techniques. 27-60 are good practice for application problems.