Math 1526  Worksheet 11 answers:

1) \( P(x, 10) = -x^2 + 20x - 40 \) The cross section gives the profit as the number of small bags made changes and the number of large bags made is held constant at 10.

2) The level curves are \( y = \frac{C}{5} - 2x \). In particular we have:

   a) \( y = 0 - 2x \)
   b) \( y = 4 - 2x \)
   c) \( y = 6 - 2x \)
   d) \( y = -2 - 2x \)

![Level Curves for \( y = \frac{C}{5} - 2x \)](image)

3) The level curves for this problem are:

   \( y = \frac{C}{x^2}, \quad y = \frac{36}{x^2}, \quad y = \frac{64}{x^2}, \quad y = \frac{81}{x^2} \)

4) The level curves for this problem are:

   \( y = \frac{C^4}{100x^3}, \quad y = \frac{(200)^4}{100x^3}, \quad y = \frac{(600)^4}{100x^3}, \quad y = \frac{(1000)^4}{100x^3} \)

5) Indifference curve is the level curve:

   The level curves for this problem are:

   \( y = \frac{U^3}{x^2}, \quad y = \frac{1^3}{x^2}, \quad y = \frac{2^3}{x^2}, \quad y = \frac{3^3}{x^2} \)

6) If the point is \((T, S, F(T,S)):\)

   (68, 1, 60)
   (68, 2, 72)
   (68, 4, 75)
   (68, 6, 82)
   (68, 8, 88)
   (68, 10, 94)
   (68, 12, 98)