

1. A manufacturer of a product has fixed costs totaling \$8295. Each unit costs an additional \$47 to produce. He finds he can never sell any of the product unless the price is below \$97, and for each decrease of \$5 in the price, he is able to sell 100 more units.

a) Find the cost function.

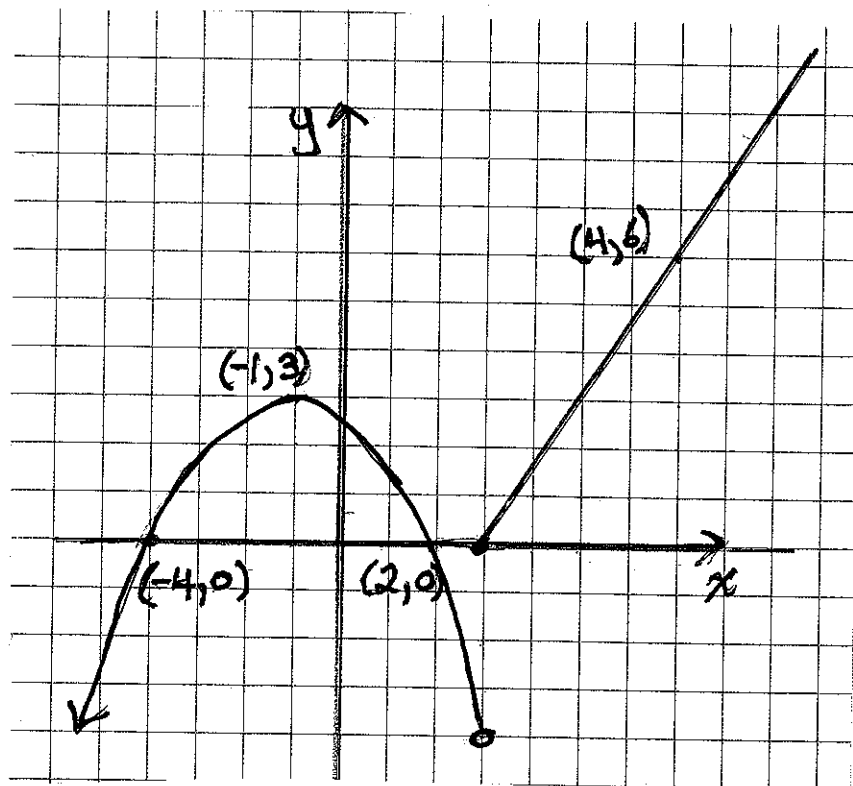
b) Find the demand and revenue functions.

c) Find the profit function.

d) At what two quantities will he break even?

e) At what quantity will he have maximum profit? What is the price at this quantity?

2. The graph shows a quadratic on the left and a line on the right. Determine the formula definition of this piecewise function.



3. Find the formula and sketch a graph for each function given that $f(x)$ is exponential and the graph passes through the two given points. Your graph should contain two points, not necessarily the ones given.

a) $f(2) = 18$ and $f(4) = 162$.

b) $f(0) = 4$ and $f(2) = 0.016$. Be careful of the placement of the decimal point.
 $0.016 = 4/25$

4. Each set of data is either from a linear function or an exponential function. Find the formula for each.

a)

x		-1	0	2	5
$f(x)$		13	12.5	11.5	10

b)

x		1	2	3
$f(x)$		9	4.5	2.25