

1.2#29 1.3:35 43

ROOM CHANGE

Ex 1.1.5

$$p = 51 - 0.27x$$

$$C(x) = 2.23x^2 + 3.5x + 85$$

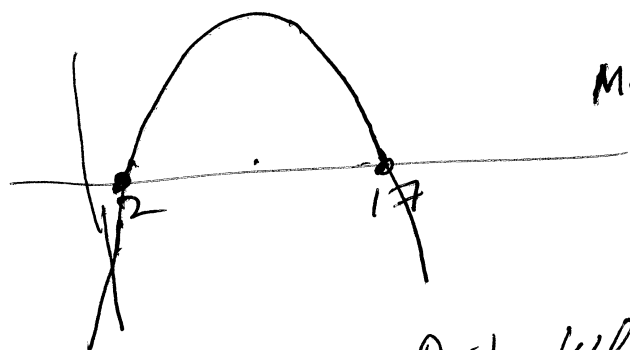
$$P(x) = R(x) - C(x)$$

$$= x(51 - 0.27x) - (2.23x^2 + 3.5x + 85)$$

$$= \dots = -2.5x^2 + 47.5x - 85$$

GET LUCKY = $-2.5(x^2 - 19x + 34)$

$$= -2.5(x-2)(x-17)$$



Max at $x = \frac{17+2}{2} !$

1.2. Graphs Break Even Point Where (what values of...) do two graphs meet
Solve ~~P~~ $R(x) = C(x)$.

1.2.#29 ... tapes recorders sold at p dollars per piece ... will buy $(120 - p)$
Cost is \$40 per piece Maximize profit.

Here $q = 120 - p$ Cost = 40 q

$$R = ~~q~~ q \times p = p \cdot q$$

Express Profit as function of price

$$P = \underbrace{\quad} - \underbrace{\quad}$$

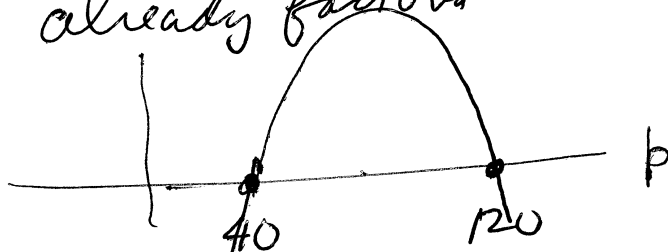
Revenue Cost

(different statement)

200901421

$$P = p \cdot q - 40q$$
$$= p(120 - p) - 40(120 - p)$$
$$= \boxed{q = 120 - p}$$

$(p - 40)(120 - p)$
Take advantage
already factors



Sell at \$80 | Graphing parabolas

$$y = Ax^2 + Bx + C$$

Vertex $x = -\frac{B}{2A}$

Up or (down) $A > 0$, ($A < 0$)

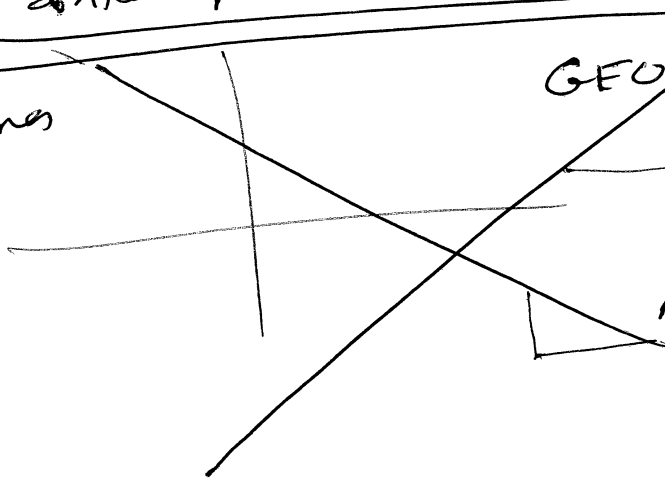
Intercepts - [roots, $x=0$]

1.3 Lines

GEOM

slope = ratio (pos)

slope = ratio (neg)



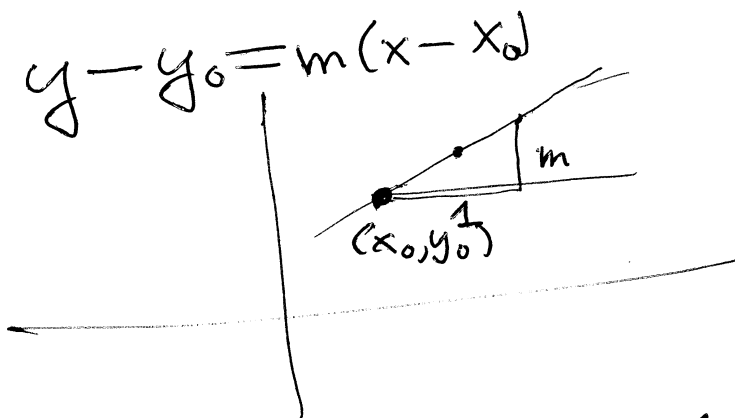
① Slope intercept $y = mx + b$

Ex 1.3.1 Fixed overhead 200 +
prod costs 50 per unit

Total cost of producing x

$$C(x) = 200 + 50x$$

② Point Slope $y - y_0 = m(x - x_0)$



~~Ex 1.3.4~~ Ex 1.3.6

price of bread rising at const rate 2 cents per month on Nov. 1 ($t=10$) price is 1.56
what is - price at les yr.
- price as function of t

(t = time in months from les)

$$p(t) = \underbrace{1.56}_{\text{price at } t=10} + \underbrace{.02}_{\text{slope rate of change}} (t - 10)$$

$$= 1.36 + .02t$$

1.3. prob 33 (overhead 500 prod costs 60 per unit)
1.3. prob 43 Stock price IPO @ 10

c. "steadily rises to 60 during 1st year
gaps down to 25
steadily decreases to 5 over 3 months
close at 12 at end of 2 years period

[scale / yrs / months]