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## 12.4: Business Apps

Ex1: A firm's marginal cost is  $\overline{MC} = 6x + 60$ .

Its marginal revenue is  $\overline{MR} = 180 - 2x$ .

Its total cost of producing 10 units is \$1000.

- Find the optimal level of production
- Find the profit ~~fee~~.
- Find optimal profit (loss)
- Should prod. be cons. for the short run?
- should . . . . . long run?

Ex2: A firm has  $\overline{MC} = 3x + 20$  &  $\overline{MR} = 44 - 5x$ .

The cost to produce 80 units is \$11400.

- Find the optimal level of production.
- Find the profit ~~fee~~.
- Find the profit (loss) at the optimal level.

## National Consumption & Savings.

If  $C$  represents net consumption (in bill), then  $C = f(y)$ , where  $y$  is disposable national income.

Question: What is ~~di~~ consumption?

Question: What is disposable income?

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Question: What is discretionary spending?

Ex 3: If  $C(y) = 0.95y + 12$ , what is  $C(0)$ ?

What does 0.95 represent?

Defn: The marginal propensity to consume is  $\frac{dC}{dy}$  or  $C'$

Ex 4: If consumption is \$5.8 bil when disposable income is 0, and if the marginal propensity to consume is:

$$\frac{dC}{dy} = \frac{1}{\sqrt{2y+9}} + 0.8 \text{ (bil \$)}$$

find the national consumption fun.

Defn: The marginal propensity to save is

$$\frac{dS}{dy} = 1 - \frac{dC}{dy}$$

Ex 5: Suppose that the marginal propensity to save is  $\frac{dS}{dy} = 0.15$  & that consumption is \$5.15 bil when disp. income is 0. Find the nt. cons fun.