

Derivative Applications

3.5A – Interpretations

#1) $P(x)$ = total profit from selling x blocks of cheese
 x = number of blocks of cheese

Interpret $P(70) = 700$

The total profit from selling 70 blocks of cheese is \$700.

Interpret $MP(70) = 12$ (Give two interpretations)

After selling 70 blocks of cheese, the total profit from sales is increasing by \$12 per block sold.

After selling 70 blocks of cheese, the profit from selling the next block of cheese is \$12.

Interpret $AP(70) = 10$

After selling 70 blocks of cheese, the average profit per sale is \$10.

Interpret $MAP(70) = 2$

After selling 70 blocks of cheese, the average profit per sale is increasing by \$2 per block.

#2) $C(n)$ = total ^{cost} ~~profit~~ from making n Wii U's.
 n = number of Wii U's

Interpret $C(100) = 700,000$

The total cost from making 100 Wii U's is \$700,000.

Interpret $MC(100) = 6,050$ (Give two)

After 100 Wii U's have been made, the total cost is increasing by \$6,050 per Wii U made.

After 100 Wii U's have been made, the cost to make the next Wii U is \$6,050.

Interpret $AC(100) = 7,000$

After 100 Wii U's have been made, the average cost to make each Wii U's is \$7,000.

Interpret $MAC(100) = -50$

After 100 Wii U's have been made, the average cost to make each unit is decreasing by \$50 per Wii U.

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#3) $R(x)$ = total revenue from selling x sticks
 x = number of sticks

Interpret $R(10) = 200$

The total revenue from selling 10 sticks is \$200.

Interpret $MR(10) = 25$ (Give two interpretations)

After 10 sticks have been sold, the total revenue is increasing by \$200 per stick sold.

After 10 sticks have been sold, the revenue from the next stick sold is \$200.

Interpret $AR(10) = 20$

After 10 sticks have been sold, the average revenue from each sale is \$20.

Interpret $MAR(10) = 5$

After 10 sticks have been sold, the average revenue from each sale is increasing by \$5 per stick.

#4) $C(n)$ = total ^{cost} ~~profit~~ from making n Schlakers
 n = number of Schlakers

Interpret $C(25) = 2,500$

The total cost to make 25 Schlakers is \$2500.

Interpret $MC(25) = 98$ (Give two)

When 25 Schlakers have been made, the total cost is increasing by \$98 per Schlaker.

When 25 Schlakers have been made, the cost to make the next Schlaker is \$98.

Interpret $AC(25) = 100$

When 25 Schlakers have been made, the average cost to make each Schlaker is \$100.

Interpret $MAC(25) = -2$

When 25 Schlakers have been made, the average cost per Schlaker is decreasing by \$2 per Schlaker.