4.4 BREAK-EVEN POINT

Chapter 4 A Venture Into Business

WARM -UP

- Algebra Review page 162 #5 and #6
- # 5 Graph $y = 2x-5$
- #6 Graph $2x – 3y = 12$

FIND BEP

- Method 1 : Graph revenue equation and cost equation on graph paper.
- BEP is at (15,120)

FIND BEP

- Cost = 3x+75
- Revenue = 8x

- Method 2 : Substitution

- 3x + 75 = 8x
- 75 = 5x
- 15 = x

- Then Revenue = 8 (15) = 120
- Cost = 3 (15) + 75 = 120
- BEP is at (15,120)

- What if the solving gives you a decimal x value?
  - Remember our x values represent the number of items

- Round up since you cannot make decimal items.

FIND BEP

- Method 3:
  - Graphing calculator
    - $y = 3x+75$
    - $y = 8x$
      - Graph
      - 2^{nd} CALC INTERSECT

Example 2:
Bob and Sue go into business making Baby Nike Shox. Their costs are as follows:

- Complete the cost charts.

Fixed Costs	
Labor, 5 hrs at $5/hr	$
Advertising	5.00
Energy	4.00
Transportation	6.00
Total Fixed Costs	$

Variable Costs	
Materials:	
Leather	$2.50
String	0.50
Package	2.00
Total Unit Cost	$

Example 2:
Bob and Sue go into business making Baby Nike Shox. Their costs are as follows:

- Find the cost equation

Fixed Costs	
Labor, 5 hrs at $5/hr	$ 25.00
Advertising	5.00
Energy	4.00
Transportation	6.00
Total Fixed Costs	$ 40.00

Variable Costs	
Materials:	
Leather	$2.50
String	0.50
Package	2.00
Total Unit Cost	$ 5.00

Example 2:
Bob and Sue go into business making Baby Nike Shox. Their costs are as follows:

- Find the cost equation:
  - c = 5 n + 40

Fixed Costs	
Labor, 5 hrs at $5/hr	$ 25.00
Advertising	5.00
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Transportation	6.00
Total Fixed Costs	$ 40.00

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Leather	$2.50
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Bob and Sue go into business making Baby Nike Shox.

- They have a selling price of $15.00.
- Write a Revenue equation.

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- Method 1:
  - Graph the cost and revenue function.
    - Cost = 5n + 40
    - Revenue = 15 n

FIND BEP

- Method 1:
  - Graph the cost and revenue function.
    - Cost = 5n + 40
    - Revenue = 15 n
    - BEP (4,60)

- Find the profit of selling 6 Baby Shox.

- Revenue = 15(6)
  = 90
- Cost = 5(6) +40
  = 70

Profit = 90 – 70
= 20

- Method 2: Use substitution to find BEP
- Revenue = 15 (x)
- Cost = 5 (x) +40

- 15(x) = 5(x) + 40
- 10(x) = 40
- x = 4

- R = 15(4) = 60
- C = 5(4) + 40 = 60
- BEP (4,60)

- Method 3:

- Graphing calculator
  - y = 15x
  - y = 5x +40

  - 2^{nd} CALC 5: Intersect

Why are profits important to a business?

- Used to investigate new business opportunities
- Provide reserves for emergencies

What is the break-even point?

- The point at which cost and revenue are equal.

HW

- P165 3-16
- P166 MR 7-8