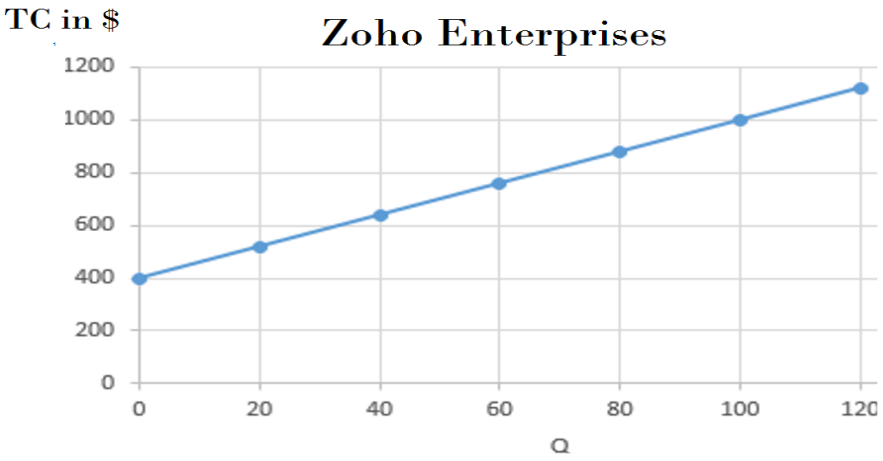
Formula table:

Business Mathematics	
$TC = (VC \times Q) + FC$ $TR = SP \times Q$ $Net\ Income = (SP - UVC) \times (Q) - FC$	$Slope = \frac{y_2 - y_1}{x_2 - x_1}$ $Margin = SP - UVC$ $Break\ Even\ Quantity = \frac{FC}{SP - UVC}$

Q1. A restaurant in San Francisco made a total profit of $143,000. If the restaurant had total costs of $298,000 for the year, calculate the restaurant's total revenue for the year.

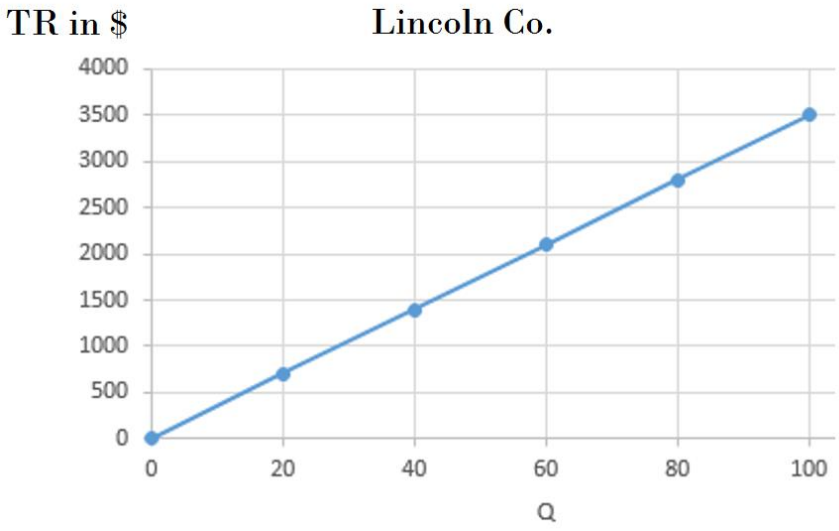
Q2. A digital TV store in New York sells 150 flat TVs per month. Fixed Costs (FC) per month are $6250 and the unit variable costs are $2.50. How much are the total costs?

Q3. The graph below is a total cost graph for Zoho Enterprises.



Question: What are the fixed costs for Zoho Enterprises?

Q4. The graph below is a total revenue graph for Lincoln Co.



Question 1: Calculate the selling price.

Question 2: Write the total revenue equation.

(a) Calculate the total revenue if 65 units are sold.

Q5. The fixed costs for Super Furniture Store are $125,450. The unit variable cost for producing a dinner table is $950. The selling price of the same dinner table is $1600.

a) Calculate the unit contribution margin for the dinner table.

b) Find the break-even quantity using the unit contribution margin.

Q6. Circle the correct answer to complete the following sentence. A business makes a profit when ----------

A) Total Revenue ≤ Total Costs

B) Total Revenue > Total Costs

C) Total Revenue < Total Costs

D) Total Revenue ≥ Total Costs

Q7. ABC Clothing make suits. The unit variable cost to make a suit is $800. The selling price of a suit is $1200. Fixed Costs for the period are $32000. The capacity for the period is 200 suits.

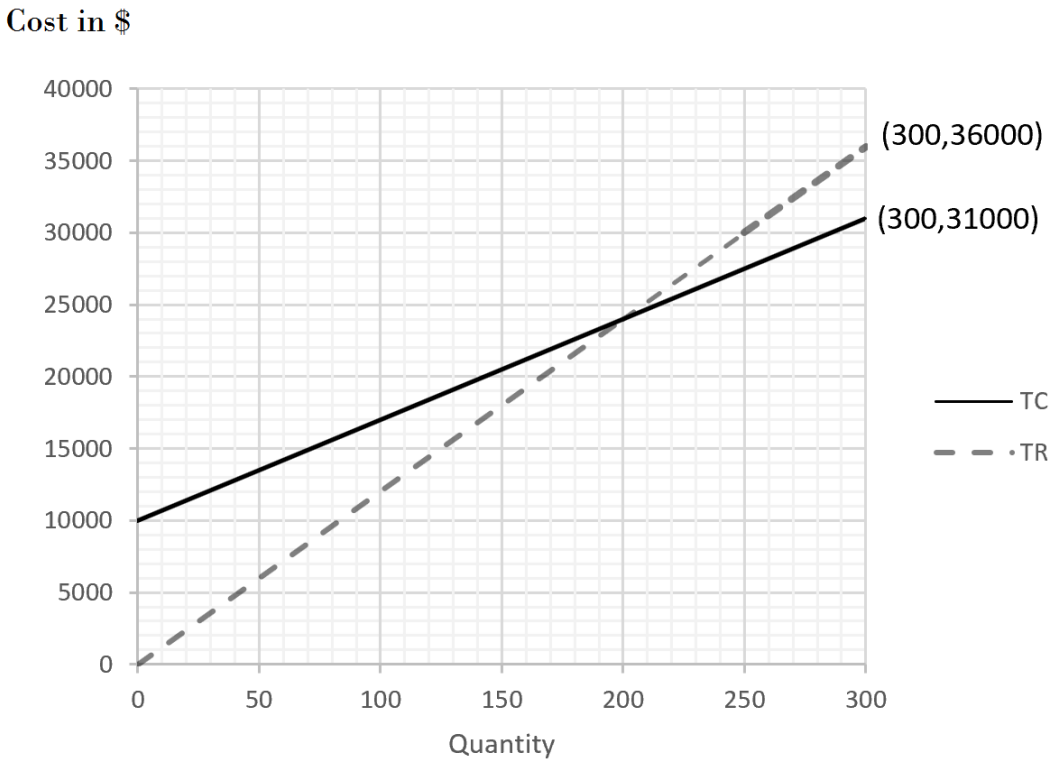
1) Find the break-even point in units.

2) Find the break-even point in dollars.

3) Find the break-even point as percentage capacity.

4) If the sales volume is 70% of capacity, do they make a profit or loss? Explain.

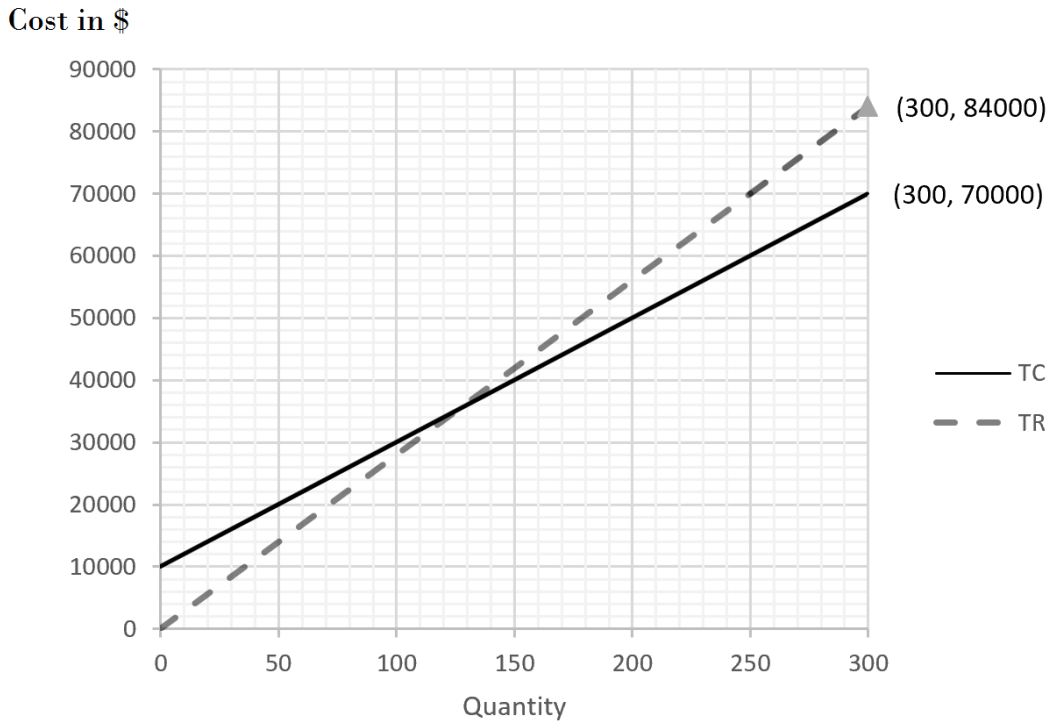
Q8. **Use the graph below to answer the questions:**



1) Label the regions of profit and loss on the graph.

2) Calculate the net income at the full capacity.

Q9. Use the graph below to answer the questions:



(a) Write the total cost equation.

(b) If the SP per unit was $280 and company made a profit of $10,000, what quantity was sold?

Q10. The variable cost of a certain unit is $45. The selling price of the unit is $75. The capacity for the period is 1000, and the fixed costs are $6,000.

(a) Write the total cost equation if the variable cost is increased to $60.

(b) Write the total revenue equation when the selling price per unit is decreased by $5.

(c) Find the new break-even point in units, using the new selling price and the unit variable cost as set in parts (a) and (b).

Q11. The variable costs of a certain unit are $80. The selling price of the unit is $120. The capacity for the period is 1500, and the fixed costs are $35000.

a) Calculate the break-even point in units.

b) Calculate the break-even point in units if the fixed costs increase by 20%.

c) Compare your answers from parts (a) and (b). What change did you observe to the Break-even point in units?