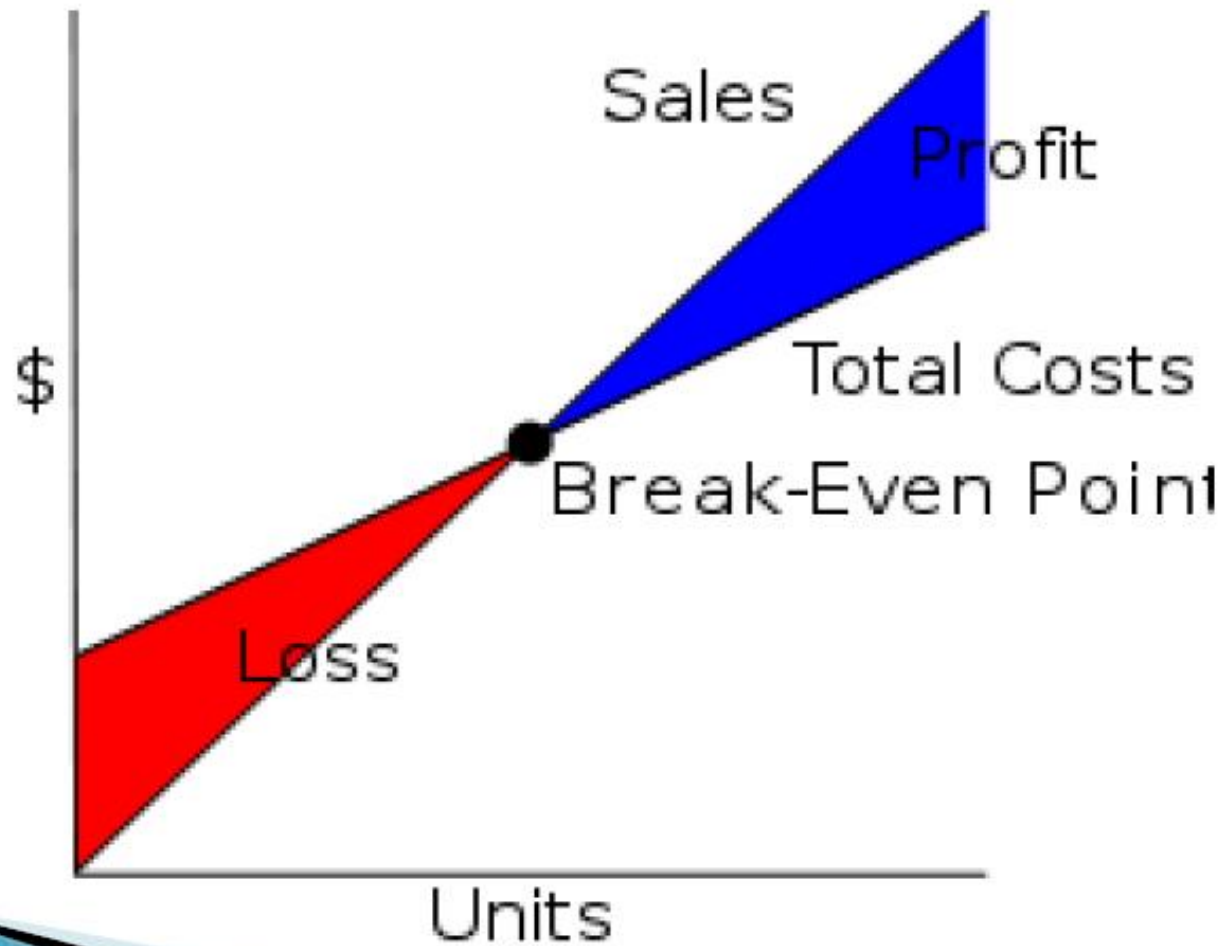


# Breakeven analysis

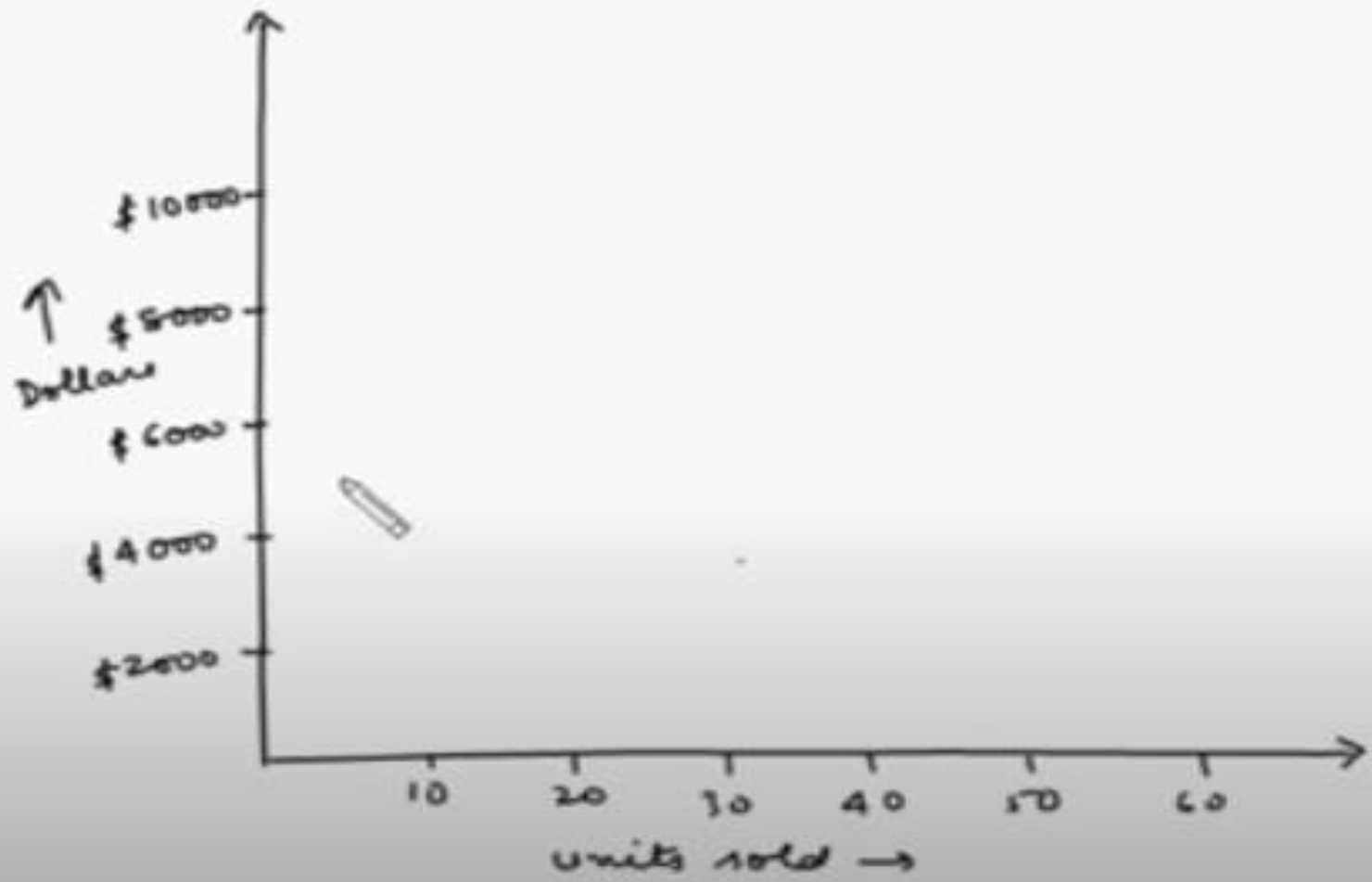
# INTRODUCTION

- ▶ A **breakeven analysis** is used to determine how much sales volume your business needs to start making a profit.
- ▶ The breakeven analysis is especially useful when you're developing a pricing strategy, either as part of a marketing plan or a business plan.
- ▶ In economics & business, specifically cost accounting, the **break-even point** (BEP) is the point at which cost or expenses and revenue are equal: there is no net loss or gain, and one has "broken even".
- ▶  $\text{Total cost} = \text{Total revenue} = \text{B.E.P.}$

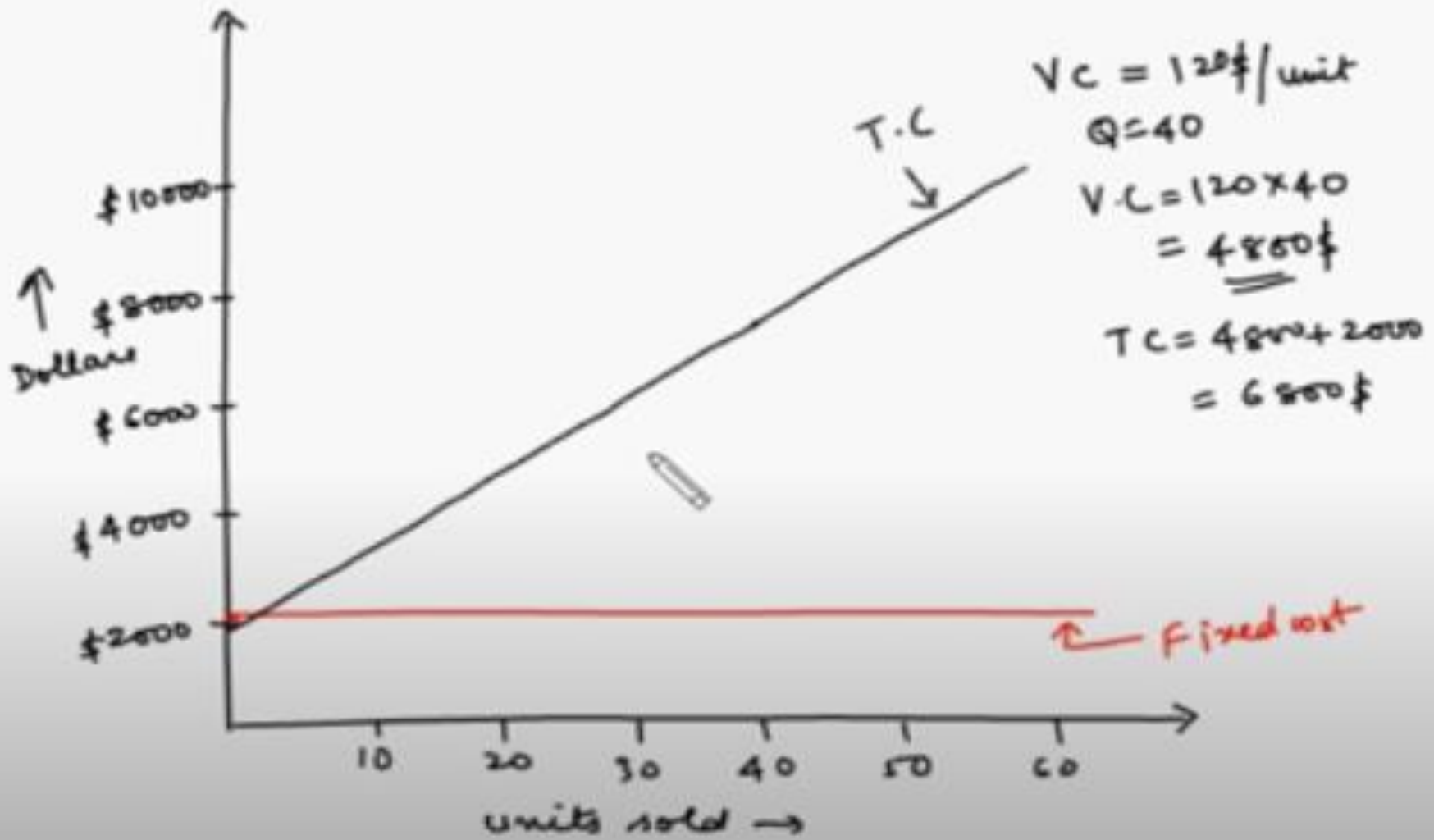
# BREAK EVEN POINT



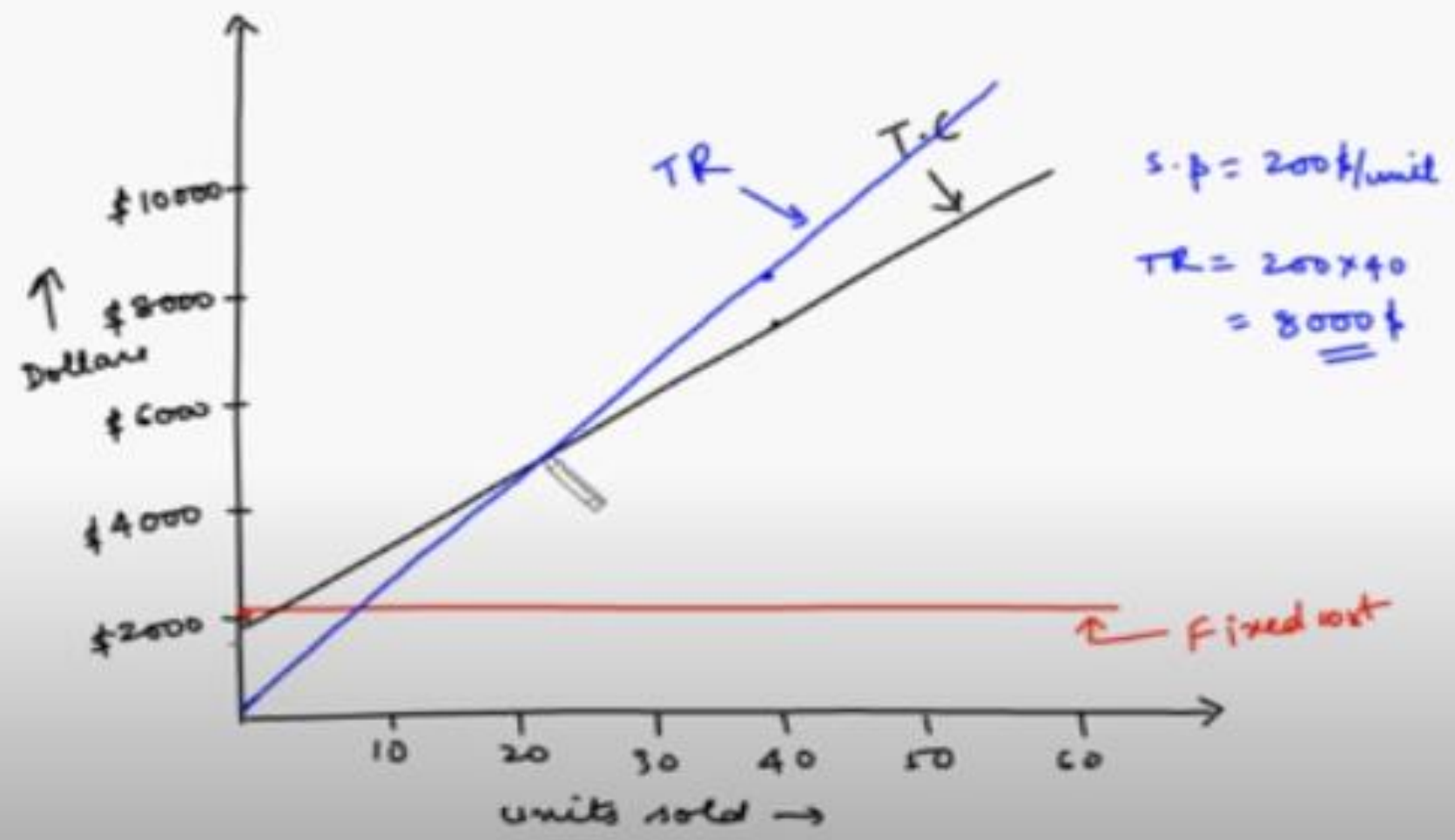
# BREAK EVEN ANALYSIS (GRAPHICAL METHOD)



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# BREAK EVEN ANALYSIS

In order to calculate how profitable a product will be, we must firstly look at the Costs Price and Revenue involved.

- ▶ There are two basic types of costs a company incurs.
  - Variable Costs
  - Fixed Costs
- ▶ Variable costs are costs that change with changes in production levels or sales. Examples include: Costs of materials used in the production of the goods.
- ▶ Fixed costs remain roughly the same regardless of sales/output levels. Examples include: Rent, Insurance and Wages

▶ **Unit Price:**

The amount of money charged to the customer for each unit of a product or service.

▶ **Total Cost:**


The sum of the fixed cost and total variable cost for any given level of production.

*(Fixed Cost + Total Variable Cost)*

▶ **Total Variable Cost:**

The product of expected unit sales and variable unit cost.

*(Expected Unit Sales \* Variable Unit Cost)*






- ▶ Total Revenue:  
The product of expected unit sales and unit price.  
*(Expected Unit Sales \* Unit Price )*
- ▶ Profit/ loss  
The monetary gain or loss resulting from revenues after subtracting all associated costs. *(Total Revenue – Total Costs)*



## ASSUMPTIONS

- ▶ All elements of cost i.e. production, administration and selling distribution can be divided into fixed and variable components.
  - ▶ Variable costs remain constant per unit of output.
  - ▶ Fixed cost remain constant at all volume of output.
  - ▶ Selling price per unit remains unchanged or constant at all levels of output.
  - ▶ Volume of production is the only factor that influences cost.
  - ▶ There will be no change in the general price level.
  - ▶ There is one product and in case of multi product, the sales remain constant.
- 

# COMPUTATION

- ▶ The break-even point (in terms of Unit Sales (X)) can be directly computed in terms of Total Revenue (TR) and Total Costs (TC) as:

$$TR = TC$$

$$P \times X = TFC + V \times X$$

$$P \times X - V \times X = TFC$$

$$(P - V) \times X = TFC$$

$$X = \frac{TFC}{P - V}$$

where:

TFC is Total Fixed Costs,  
P is Unit Sale Price, and  
V is Unit Variable Cost

The quantity  $(P - V)$  is of interest in its own right, and is called the Unit Contribution Margin (C): it is the marginal profit per unit, or alternatively the portion of each sale that contributes to Fixed Costs

# EXAMPLES

- ▶ For example, suppose that your fixed costs for producing 100,000 product were 30,000 Rs a year.
- ▶ Your variable costs are 2.20 R.s materials, 4.00 R.s labor, and 0.80 Rs overhead, for a total of 7.00 R.s per unit.
- ▶ If you choose a selling price of 12.00 Rs for each product, then:
- ▶  $BEP = TFC / P - V$
- ▶ 30,000(TFC) divided by [12.00(P) - 7.00(V)] equals 6000 units.
- ▶ This is the number of products that have to be sold at a selling price of 12.00 Rs before your business will start to make a profit.

# USES OF BREAK EVEN POINT

- ▶ Helpful in deciding the minimum quantity of sales
  - ▶ Helpful in the determination of tender price.
  - ▶ Helpful in examining effects upon organization's profitability.
  - ▶ Helpful in deciding about the substitution of new plants.
  - ▶ Helpful in sales price and quantity.
  - ▶ Helpful in determining marginal cost.
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