

Case math: six useful checks

Worksheet - questions only

01 / Percentage change

Sales rose by how much?

A shop sold 80 units last week and 92 this week. What is the percentage increase in units sold?

Assumptions: Compare equally long periods; every unit is counted once.

Your calculation, units and business implication:

02 / Profit and margin

More revenue. Less profit?

A retailer has \$10 million in annual revenue and \$8 million in annual costs. Next year, revenue grows 10% and costs grow 15%. Calculate next year's profit and profit margin. Did profit grow?

Assumptions: Profit means revenue minus the stated costs; use the same cost scope in both years.

Your calculation, units and business implication:

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03 / Weighted average

The mix changed.

A store sells two products at \$60 and \$100. At first, 40% of units are the \$60 product and 60% are the \$100 product. The mix then changes to 60% and 40%. Find the average selling price before and after. What happens to revenue if total unit sales stay at 1,000?

Assumptions: Prices do not change. Shares refer to unit volume, not revenue.

Your calculation, units and business implication:

04 / Break-even

How many units cover costs?

A service charges \$12 per unit, has an \$8 variable cost per unit, and incurs \$360,000 in annual fixed costs. How many units must it sell each year to break even?

Assumptions: Price and unit cost stay constant; all stated fixed costs belong to the same year. Ignore taxes and capacity constraints.

Your calculation, units and business implication:

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05 / Compound growth

Three years at 10%.

Annual revenue is \$100 million today. It grows 10% each year for three years. What is revenue after year three, and what is the total percentage increase?

Assumptions: Each year's growth applies to the previous year's revenue.

Your calculation, units and business implication:

06 / Capacity

Can the team meet demand?

Four analysts each process 60 tickets per working day. The team works five days a week and receives 1,500 tickets a week. What is weekly capacity, the shortfall, and the minimum total number of analysts needed at the same productivity?

Assumptions: All analysts work all five days; tickets require comparable effort. Ignore leave, rework and scheduling variability.

Your calculation, units and business implication:
