Exercise 1

Knowing the following information:

EBIT:	negative for $ 123,574 €
Unit sale price:	$ 29.10 €
Unit variable cost:	$12.70 €
Quantity sold:	21,040

Determine

- the break-even quantity.
- the level of residual fixed costs
- by how much would the break-even quantity change if the unit selling price decreased by 9%?

Exercise 2

Knowing that the current level of EBIT is $780, and that this amount represents a 30% increase over the year, due to a 10% increase in quantity sold, determine:

1. last year level of operating leverage degree
2. last year contribution margin
3. the level of corporate fixed costs

The assumptions of the cost-volume-profit model are considered valid. It is imagined, moreover, that the fixed costs are not varied in the two years.

Exercise 3

In order to produce and sell a given good, two different technologies can be employed, each of which determines specific effects on the company's cost structure and characterizes the asset obtained in such a way as to make it saleable to a specific customer segment. On the basis of the analysis carried out by him together with the production manager and the sales manager, your controller has provided you with the following data:

Manufacturing variable cost per unit	$20.00	$15.25
Selling variable cost per unit	$8.00	$3.20
Fixed revenues	$25,700	$65,000
Fixed costs	$1,915,700	$965,000
Break-even point	70,000 units	50,000 units
Capacity	140,000 units	140,000 units
Fixed Assets (level)	$4,201,389	$3,712,500
Net operating cycle (*)	60 days	110 days

(*) Days of Net Working Capital employed

Required:

- the unit contribution margin of both companies
- the average selling price for the two segments
- the level of quantity for which the two cost and revenue structures lead to the same result
- the level of cost elasticity, the degree of operating leverage and the margin of safety percentage for both companies at that point
- the level of capital employed turnover ratio and r.o.c.e. for both companies at that point

Exercise 4

At a production level of 1,500 units, the operating loss for Alfa is 34 percent of its fixed costs, which total € 56,000. The fixed revenues are equal to € 4,805.
Determine, first of all, how many units are missing to reach break-even.
Knowing that the unit variable cost is € 14.60, determine the break-even price for the current volume of sales.
By developing a specific promotional campaign (the cost of which is €12,000 regardless of the level of sales generated) and decreasing the current sales price by 8%, managers believe they can sell:

- 1,400 incremental units with a 20% probability
- 1,500 incremental units with a 30% probability
- 1,800 with a 50% probability.

What do you think about this idea?

Exercise 5

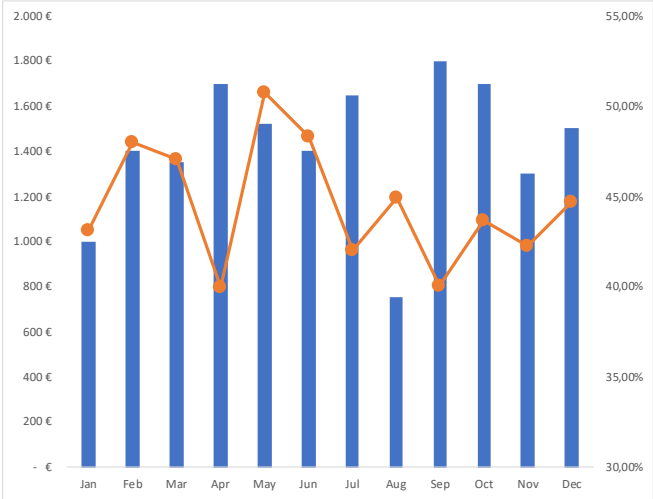
The mark-up at the operating level of the XYZ S.p.A. is 24%. The total amount of its variable revenues (all consisting of revenues from the sale of products) is € 900,000. The quantities sold are 10,000 while those produced are 11,500. There are also fixed revenues of € 40,000. The contribution margin ratio for the company is 45%. The days of Net Working Capital are 90. The average amount of Fixed Assets is € 855.000.

Required:

a) How much is it the r.o.s.?
b) Provide a summary income statement showing the contribution margin and EBIT.
c) Determine the break-even point (in units and dollars) as well as the break-even price at the current level of sales.
d) How much is it the capital employed turnover ratio?
e) How much is the r.o.i.?
f) How much is the margin of safety?
g) By how much does EBIT increase if sales increase by 20%?
h) By how much must quantity sold increase to increase return on investment by 10%?
i) What is the effect on r.o.i. of a 20% decrease in sales prices, assuming that there is no change in the average stock of NWC? What if this latter assumption is removed so that the days of Net Working Capital remains constant.

Exercise 7

You are the manager of a company that sells a sufficiently diversified set of goods, whose percentage contribution margin ranges from a low of 32% to a high of 63%. The sales margin analysis prepared by your controller is as follows.



Mounth	Contribution Margin Rate	Sales Revenue
Jan	43,12%	1.000 €
Feb	48,00%	1.400 €
Mar	47,08%	1.350 €
Apr	40,00%	1.700 €
May	50,78%	1.520 €
Jun	48,32%	1.400 €
Jul	42,00%	1.650 €
Aug	44,95%	750 €
Sep	40,05%	1.800 €
Oct	43,66%	1.700 €
Nov	42,28%	1.300 €
Dec	44,65%	1.500 €

The residual annual fixed costs are € 5,350,000 and is adequate to assume that they are distributed sufficiently evenly over the various months of the year.
Based on the previous information determine:

- the company's percentage contribution margin
- the overall contribution margin and EBIT
- compute the lowest (best case scenario) and the highest (worst case scenario) break-even point in dollars for the company. To this end, the historical variability of the percentage contribution margin must be taken into consideration.
- determines in which months the company does not succeed in reaching the break-even turnover
- creates an Excel sheet in which, month by month, the monthly margin and the cumulative margin up to that moment are highlighted (both in absolute and relative terms).