

Calculator

[1 Point]

EcoTech Manufacturing is a mid-sized company, specializing in producing eco-friendly consumer products. The company has grown steadily over the years, expanding its product line to include various green products.

Consider the information below, regarding the indirect costs faced by Ecotech and the activities of the firm, broken down per product:

May 2024	€				
R&D	75 000 €				
Production Setup	?				
Quality Control	70 000 €				

May 2024	Water Bottle	Lunch Box	Bag	Tooth brush	Total
Nr of Designs	6	2	4	3	15
Nr of Setups	10	12	6	8	36
Nr of Inspections	50	30	40	20	140

Knowing that EcoTech uses Activity Based Costing and that the indirect costs assigned to the **Water Bottle** were **61 000 €**, how much were the total Production Setup costs (rounded to units)?

- A

21 600 €

✓
- B

6 000 €
- C

4 800 €
- D

84 000 €
- E

None of the others.

[1 Point]

Devtron, a company specializing in gadgets, is preparing its financial statements for the year. The company's accountant, Sarah, is tasked with determining the opening stock of direct materials. She has gathered the following information for the year:

Inventory	Opening	Closing
Finished Goods	9 000 €	11 000 €
Work in Progress	0 €	0 €
Direct Materials	?	5 000 €

Additional Info	€
Cost of Goods Sold	58 000 €
Purchases of DM	30 000 €
Direct Labor Cost	4 500 €
Manufacturing Overheads	17 500 €

You are asked to help Sarah. Using the information provided, what is the opening stock of direct materials for Devtron?

A 13 000 €

B 9 000 €

C 17 500 €

D 22 000 €

E None of the others.

[1 Point]

SunRise Ltd., a company specializing in solar panel installations, needs to determine the number of units it must sell to achieve a target profit of 35 000 €. Here are the relevant details:

- SunRise can afford to lose 22.5% of current sales before incurring into losses.
- Sales Volume: 8 000 units
- Contribution Margin per Unit: 5 €

How many units does SunTech Ltd. need to sell to achieve a target profit of 35 000 €?

A 13 200 units

B 13 531 units

C 6 200 units

D 7 000 units

E None of the others.

[1 Point]

SteelMaster Fabrication is a company founded in 2016. Known for its precision and quality, SteelMaster produces High-Tensile Steel Beams. Consider the information below regarding the month of May:

	Units
Production	2 280
Practical Capacity	2 400
Sales	2 100
Finished Good's Opening Inventory	0
	€
MVC per Unit	175 €

Knowing that the difference in profit between Full Costing based on Practical Capacity and Variable Costing is 16 500 €, what were the **Manufacturing Fixed Costs** for the period?

- A 220 000 €
- B 132 000 €
- C 209 000 €
- D 330 000 €
- E None of the others.

[1 Point]

Which of the following companies would most likely use process costing?

- A A soft drink company
- B A law firm
- C A custom garden equipment manufacturer
- D A home remodeling company

Calculator

GreenLeaf Organics is a small, family-owned business dedicated to producing high-quality, organic skincare products. Founded in 2015, the company prides itself on using sustainably sourced ingredients and eco-friendly packaging. Consider the information below from May:

Static Budget	10 000 Units	P&L Actual	9540 Units
Sales	80 000 €	Sales	82 998 €
Direct Materials	15 000 €	Direct Materials	16 170 €
Direct Labor	15 000 €	Direct Labour	16 632 €
Packaging Cost	10 000 €	Packaging Cost	10 350 €
Contribution Margin	40 000 €	Contribution Margin	39 846 €
Fixed Costs	12 500 €	Fixed Costs	12 500 €
Operating Profit	27 500 €	Operating Profit	27 346 €

[1 Point]

What is the difference in profit attributable to changes in the sales price?

A

6 678 €

B

2 998 €

C

-7 000 €

D

7 000 €

E

None of the others.

[1 Point]

Knowing that the **budgeted price of Direct Materials** was **15€** and the **Direct Materials efficiency variance** is unfavorable in 390€. What is the **actual quantity** of Direct Materials consumed in the month of June?

A

980 units

B

1 078 units

C

954 units

D

928 units

E

None of the others.

[1 Point]

What was the total impact on the **operating profit** of changes in prices and efficiency?

- A 1 686 €
- B -154€
- C -1 840 €
- D 1 767 €
- E None of the others.



 Calculator

[6 Points]

AquaPure Technologies is a leading manufacturer of advanced water filtration systems for both residential (**AquaPure Home™**) and commercial use (**AquaPure Business™**). AquaPure Technologies operates a state-of-the-art production facility where quality and efficiency are top priorities.

Consider the information below:

Department	Directly Assigned Costs
Moulding	120 000 €
Assembly	80 000 €
Maintenance	50 000 €
Quality Control	100 000 €
Total Overheads	350 000 €

Direct Labour Costs

AquaPure Home™	12 500 €
AquaPure Business™	24 500 €

Work-in-progress Stocks	Opening	Closing
AquaPure Home™	750 €	400 €
AquaPure Business™	200 €	550 €

DM Consumption

AquaPure Home™	7 000 €
AquaPure Business™	14 000 €

3.1) Compute the COGM for AquaPure Home™ assuming the company uses a **Single Overhead Rate** based on the value of **Direct Materials** to allocate overhead costs.

ANSWER ON PAPER

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3.2) You were intrigued about each department's mission and asked the plant manager for additional information. She was kind enough to provide you with a small description of the mission of each as well as their activities:

- **Moulding:** produces the plastic components of the filtering systems (unit of work is Machine hours – Mh)
- **Assembly:** filtering systems are assembled by plant workers (unit of work is Labor hours – Lh)
- **Maintenance:** provides maintenance services to all other departments on a request basis (unit of work is Number of Requests – Rq)
- **Quality Control:** ensures all departments are working at the maximum efficiency level, running periodic inspections (unit of work is Number of Inspections – In)

Users \ Suppliers	Moulding	Assembly	Maintenance	Quality Control
AquaPure Home™	950 Mh	200 Lh	-	-
AquaPure Bussiness™	1000 Mh	600 Lh	-	-
Moulding	-	-	600 Rq	30 In
Assembly	-	-	200 Rq	50 In
Maintenance	-	-	-	48 In
Quality Control	-	-	140 Rq	-
Total	1950 Mh	800 Lh	940 Rq	128 In

3.2) Considering the information collected so far, compute the **COGM for AquaPure Home™** using the **Direct allocation method**. Comment on the results obtained with the value in **Question 3.1)**, highlighting the difference in the allocation of Manufacturing Overheads between both.

CALCULATIONS ON PAPER, COMMENT ON WISEFLOW

200 Word Limit

3.1)

$$\text{SOR} = 350\,000 \text{ €} / (7\,000 \text{ €} + 14\,000 \text{ €}) = 16.67 \text{ €} / \text{€}_{\text{DM}}$$

$$\begin{aligned} \text{COGM} &= \text{DM} + \text{DL} + \text{MOH} - \Delta \text{WIP} \\ &= 7\,000 \text{ €} + 12\,500 \text{ €} + 7\,000 \text{ €} * 16.67 \text{ €} - (400 \text{ €} - 750 \text{ €}) \\ &= 136\,517 \text{ €} \end{aligned}$$

Ans: 136 517€

3.2)

Direct Method	Molding		Assembly		Maintenance		Quality Control		TOTAL (€)	
	Mh	1950	Lh	800	Rq	940	In	128		
	Q	V	Q	V	Q	V	Q	V		
Direct Costs	120 000		80 000		50 000		100 000		350 000	
2-Reallocation of service centres costs									Total (Q)	
Maintenance	600	37 500	200	12 500					50 000	800
Quality Control	30	37 500	50	62 500					100 000	80
Total Cost	195 000		155 000		50 000		100 000		350 000	
per Unit of Work	100		193.75		62.50		1 250			

$$\begin{aligned} \text{COGM} &= \text{DM} + \text{DL} + \text{MOH} - \Delta \text{WIP} \\ &= 7\,000 \text{ €} + 12\,500 \text{ €} + 950 \text{ Mh} * 100 \text{ €} + 200 \text{ Lh} * 193.75 \text{ €} - (400 \text{ €} - 750 \text{ €}) \\ &= 153\,600 \text{ €} \end{aligned}$$

- SOR is a less accurate but easier to implement method to allocate overheads, suitable for situations where the proportion of overheads is relatively small to direct costs and/or overheads are consumed proportionally to the chosen allocation base.
- The direct method is more accurate, but harder to implement, given the use of overhead rates per department, increasing the precision in the allocation.
- In this case, SOR, underestimates the true COGM of Aquapure™ Home given that the consumption of overheads is not proportional to the consumption of direct materials (i.e. Aqua Pure™ Home consumes 1/3 of the Materials but uses ~50% of the Moulding Department and 25% of the Assembly)
- The choice between each system should balance the trade-off between complexity and cost of implementation versus the benefits for decision making.



[6 Points]

FashionForward Inc. is a renowned clothing manufacturer specializing in high-end fashion apparel, operating in several markets globally. The company is currently preparing its budget for the upcoming fiscal year (Year N) to ensure continued growth and profitability.

As FashionForward Inc. prepares for the upcoming fiscal year, the management team has asked for your help to compute the cash budget and some items of the balance sheet. Below you can find all the relevant information:

1. Payments and Collections Policy

- The sales collection period is **15 days**.
- The supplier's payment period is **30 days**.
- The difference between VAT charged to customers and VAT paid to suppliers should be calculated at the end of each quarter and paid to the State according to the payment terms of **90 days**.
- Variable conversion costs and fixed costs are paid in cash the same month they occur.

2. Information about N-1

	Q4 N-1
Sales + VAT	58 500 €
Purchases + VAT	17 574 €
VAT Payable to the State	6 350 €
	31st Dec N-1
Non-current Assets	39 000 €
Equity	47 700 €

3. Other Assumptions

- Assume that each quarter has 90 days and the activity is regular within each quarter.
- Both Sales and Purchases of DM's are subject to **VAT of 20%**.

4. Master Budget

Sales Budget	Q1	Q2	Q3	Q4	N
Revenue + VAT	62 100 €	61 800 €	102 000 €	84 000 €	309 900 €
Purchases Budget	Q1	Q2	Q3	Q4	N
Purchases + VAT	11 880 €	16 740 €	16 800 €	20 400 €	65 820 €
COGM Budget	Q1	Q2	Q3	Q4	N
DM	11 808 €	13 900 €	14 000 €	14 000 €	53 708 €
Variable Conversion Costs	26 240 €	27 105 €	28 000 €	28 000 €	109 345 €
COGM	38 048 €	41 005 €	42 000 €	42 000 €	163 053 €
Fixed Costs Budget	Q1	Q2	Q3	Q4	N
MOH's	15 000 €	15 000 €	15 000 €	15 000 €	60 000 €
SG&A	8 000 €	8 000 €	8 000 €	8 000 €	32 000 €
Total	23 000 €	23 000 €	23 000 €	23 000 €	92 000 €
of which Depreciation	4 000 €	4 000 €	4 000 €	4 000 €	16 000 €
Budgeted P&L	Q1	Q2	Q3	Q4	N

Profit Before Taxes -2 685 € -2 109 € | 11 166 € 4 710 € | 11 082 €

Question 4.1) Prepare the Cash Budget for **Q1** and **Q2**. Fill the table below, while presenting the calculations you find relevant in the answer sheet. Round to the nearest unit.

FILL THE CASH BUDGET BELOW (ROUNDED TO UNITS AND NO WHITESPACE, e.g, 1234.56 >>> 1235; NEGATIVE NUMBERS, e.g, -1234.56 >>> -1235), CALCULATIONS ON PAPER.

Operating Cash Balance	Q1	Q2
Receipts		
Sales Q-1	1 <input type="text"/>	2 <input type="text"/>
Sales Q	3 <input type="text"/>	4 <input type="text"/>
Total Receipts	5 <input type="text"/>	6 <input type="text"/>
Payments		
Suppliers Q-1	7 <input type="text"/>	8 <input type="text"/>
Suppliers Q	9 <input type="text"/>	10 <input type="text"/>
Variable Conversion Costs	11 <input type="text"/>	12 <input type="text"/>
Fixed Costs	13 <input type="text"/>	14 <input type="text"/>
VAT To State	15 <input type="text"/>	16 <input type="text"/>
Total Payments	17 <input type="text"/>	18 <input type="text"/>
Operating Cash Balance	19 <input type="text"/>	20 <input type="text"/>

Correct answers:

1 9750 2 10350 3 51750 4 51500 5 61500 6 61850 7 5858 8 3960 9 7920 10 11160
 11 29240 12 27105 13 19000 14 19000 15 6350 16 8370 17 65368 18 69595 19 -3868 20 -7745

Question 4.2) Compute the following items to be on the Balance Sheet for the four Quarters. Fill the table below, while presenting the calculations you find relevant in the answer sheet. Round to the nearest unit.

FILL THE BALANCE SHEET ITEMS BELOW (ROUNDED TO UNITS AND NO WHITESPACE, e.g, 1234.56 >>> 1235; NEGATIVE NUMBERS, e.g, -1234.56 >>> -1235), CALCULATIONS ON PAPER.

	Q1	Q2	Q3	Q4
Non-Current Assets	1 <input type="text"/>	2 <input type="text"/>	3 <input type="text"/>	4 <input type="text"/>
Accounts Receivable	5 <input type="text"/>	6 <input type="text"/>	7 <input type="text"/>	8 <input type="text"/>
Equity	9 <input type="text"/>	10 <input type="text"/>	11 <input type="text"/>	12 <input type="text"/>
Accounts Payable	13 <input type="text"/>	14 <input type="text"/>	15 <input type="text"/>	16 <input type="text"/>

Correct answers:

1 35000 2 31000 3 27000 4 23000 5 10350 6 10300 7 17000 8 14000 9 45015 10 42906
11 54072 12 58782 13 3960 14 5580 15 5600 16 6800