Item 1

Calculator

[1 Point]

After the massive floods on Rio Grande do Sul, you decided to volunteer with the **RedCross**, an NGO actively helping on the field in three different fronts: food distribution, medical relief, and housing reconstruction in the four different regions of the state.

Information about the costs and the different activities conducted by the Red Cross is provided below:

Costs May 2024	**€**
Fuel Cost	28 000 €
Medicines Cost	150 000 €
Construction Materials	1 640 000 €

Activities May 2024	**North**	**West**	**East**	**South**	**Total**
Kms Travelled	12 500	22 500	36 250	16 250	**87 500**
Medical Appointments	275	300	1 000	425	**2 000**
Squared Meters Rebuilt	350	700	600	400	**2 050**

Under Activity Based Costing, how much money has **RedCross** channeled to the South Region (rounded to units)?

A 357 075€

B 304 625€

C 566 600€

D 339 075€

E None of the others

[1 Point]

Imagine that you are the plant manager of **Adike**'s factory in Cambodia. Adike is a well-known brand of sports apparel and footwear.

Under the controllability principle, which of the following situations **should be** reflected in your performance evaluation?

1. Utility costs declined 20% due to the implementation of LEDs in the factory.
2. Factory operated at 60% capacity due to the sudden bankruptcy of a key supplier.
3. Bad weather prevented trucks to reach the factory, making shipments twice as long.
4. Adike got fined on 1 million euros by the environment authorities amid poor waste management at the plant.
5. Sales declined 20% due to a successful advertising campaign conducted by a key competitor

A 1. and 4.

B 1. 4. and 5.

C All but 3.

D 2. 4. and 5.

E None of the others

[1 point]

Eristaff is a traditional spirits company, specialized in the production of two liquors: White liquor, the signature product, and Black liquor, a sweeter version, targeted for the younger generation, still growing in popularity.

Eristaff's management team is preparing the budget for next year and they provided the information below. Additionally, you contacted the Sales team, and they expect that for every 5 bottles of White liquor sold, 3 bottles of Black liquor will be sold.

Based on the sales team's projections and the information below, how many bottles of **White liquor** should the company sell to reach an operating profit of 250 000 €?

	White	**Black**
Selling Price before VAT	15 €	12 €
Manufacturing Variable Cost	7 €	6 €
Selling Commission (% of Price)	10%	8%
VAT (%)	20%	20%

	Amount
G&A Costs	300 000 €
Fixed Selling Costs	150 000 €
Manufacturing Fixed Costs	575 000 €

A 133 873

B 133 872

C 91 306

D 91 307

E None of the others

[1 point]

Aura is a premium bicycle producer, operating a small factory in Italy. Regardless of the production, expenses related with the factory amounted to 100 000 € for the year. Consider the following information about the plant's capacity and the inventory movements for the year:

	Bicycles
Production	2 000
Practical Capacity	2 500
Closing Inventory of Finished Goods	500
Opening Inventory of Finished Goods	0

Given that all units in stock at the end of the year were produced within the same period, what is the difference in profits between Total Full Costing and Full Costing Based on Practical Capacity (i.e., Profit TFC – Profit FCPC)?

A - 5 000€

B 5 000€

C - 25 000€

D 25 000€

E None of the others

Item 2

Calculator

Heritage Chocolate Co., is a chocolate producer, specializing in the production of dark chocolate. Consider the information below:

Static Budget	2000 Kgs
Sales	76 000 €
Direct Materials	15 000 €
Direct Labor	30 000 €
Variable CC's	5 000 €
Contribution Margin	**26 000 €**
Fixed Costs	12 500 €
PBT Budget	**13 500 €**

P&L Actual	1860 Kgs
Sales	74 400 €
Direct Materials	
Direct Labor	
Variable CC's	
Contribution Margin	**26 430 €**
Fixed Costs	12 650 €
PBT Actual	**13 780 €**

Static Budget Assumptions

	Quantity	Price
Direct Labor	3 000	10 €

[1 point]

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

A -1 820€

B 280€

C -5 320€

D 430€

E None of the others

[1 Point]

Knowing that the **actual labor hour cost** was 12.5€ and the **direct labor efficiency variance** is favorable in 300€, what was the actual number of hours worked in the factory during this period?

A 2 760 hours ✓

B 2 766 hours

C 2 970 hours

D 2 820 hours

E None of the others

[1 Point]

Knowing that the direct materials price variance was 0 and the direct materials efficiency variance was favorable in 3 000€, what is the actual direct materials cost in the P&L?

A 10 950€ ✓

B 16 950€

C 18 000€

D 12 000€

E There is not enough information

F None of the others

Item 3

Calculator

[3.5 Points]

Pearson, Specter & Litt (P,S&L) is a renewed law firm. They are specialized in 3 distinct areas of Law: Mergers and Acquisitions (M&A), Intellectual Property Disputes (IP) and Civil Litigation (CL).

The firm's senior partners, Harvey Specter, Jessica Pearson, and Louis Litt, have a limited number of billable hours available each month. Consider the information below:

Clients	**M&A**	**IP**	**CL**
Available cases	8	20	35
Revenue per case	20 000 €	18 500 €	8 000 €
Associates wages per case	4 000 €	2 000 €	1 000 €
Miscellaneous costs per case	1 000 €	1 500 €	2 600 €
Billable hours required per case	12	20	10

Extra Info	
Available billable hours	720
Monthly Wage per Senior Partner	50 000 €
Office Monthly Fixed Costs	20 000 €

6.1) How should P,S&L prioritize the 3 areas of business. What is the the maximum profit P,S&L may obtain this month?

Assume that each individual case is take it or leave it.

ANSWER ON PAPER

6.2) Unexpectedly, **McKernon Motors**, one of the oldest clients in the firm brought to PS&L a massive case. They are facing an hostile takeover attempt by a Chinese Vehicle Manufacturer and asked PS&L to prevent it. If not, they will be acquired, and PS&L will lose the client forever.

Your colleagues from the finance department estimated the (present) value of keeping McKernon Motors as a client as well as the costs with the case.

McKernon Motors Case	
Billable hours required	300
Present Value of McKernon Motors	100 000 €
Miscellaneous Costs	20 000 €

What is the minimum PS&L should charge McKernon in order to accept this case? Assume that there are no further repercussions if PS&L decides not to do it.

ANSWER ON PAPER

Calculator

[4.5 Points]

PrecisionTech Manufacturing, founded in 1995, has built a reputation for producing high-quality precision components for the aerospace and automotive industries. PrecisionTech Manufacturing produces two main components: Component X and Component Y.

As the company expanded, the complexity of its operations grew. Management realized that their traditional method of using a single overhead rate was no longer sufficient to accurately allocate costs, as it relied on **direct labor costs as the single cost driver**.

To address this issue, the company's CFO, Maria Sanchez, proposed moving to a more refined system of multiple homogeneous cost pools. This approach would ensure that overhead costs were allocated to the departments consuming the resources, leading to more accurate product costing and better decision-making.

The company is divided in the following homogeneous cost pools:

- **Machining:** The unit of work is machine hours (MHs).
- **Assembly:** The unit of work is direct labor hours (DLHs).
- **Maintenance:** The unit of work is maintenance hours (hs).
- **Factory Administration:** The unit of work is number of employees (emp.).

Additional Information:

1. Directly Assigned Overheads:

Directly Assigned Overheads	Euros
Machining	120 000 €
Assembly	80 000 €
Maintenance	50 000 €
Factory	30 000 €

2. Activities of Homogenous Cost Pools:

Users\Suppliers	Machining	Assembly	Maintenance	Factory Admin.
Component X	900 MHs	550 DLHs	-	-
Component Y	600 MHs	250 DLHs	-	-
Machining	-	-	600 h	25 emp.
Assembly	-	-	200 h	45 emp.
Maintenance	-	-	-	10 emp.
Factory Admin.	-	-	100 h	-
TOTAL	1 500 MHs	800 DLHs	900 h	80 emp.

3. Direct Material Costs:

Component X: 7 000 €
Component Y: 10 050 €

4. Direct Labor Costs:

Component X: 17 500 €
Component Y: 22 500 €

5. Work-in-progress Stocks:

Work in Progress	Component X	Component Y
Opening	750 €	400 €

Closing	200 €	550 €

7.1) Knowing that the company uses **FIFO as the method of inventory valuation**:

Calculate the Cost of Goods Manufactured for Component X using the traditional cost allocation method.

ANSWER ON PAPER

7.2) Knowing that the new cost allocation method, is the **step-down method**, compute the Cost of Goods Manufactured of Component X. **Comment the value obtained**, comparing it with the value obtained under the traditional method.

CALCULATIONS ON PAPER, COMMENT ON WISEFLOW

0 / 200 Word Limit

Calculator

[5 Points]

SmallFish is a Portuguese Pastry Shop, founded in 1856, that produces a landmark Portuguese desert, Ovos Moles.

The team is currently updating the annual master budget ahead of the second half of 2024.

Luckily, they have taken care of most of the work for you, but they require your help to finish the financial budget and subsequent budgeted financial statements. Below you can find all the relevant information:

1. Financial Policy

- All financial transactions (investing, borrowing and reimbursements) occur at multiples of 1000.
- Cash at the end of each quarter should be **at least 20% of (Sales + VAT) of the same quarter**.
- **SmallFish** can borrow short-term funds at the beginning of the quarter at 6% annual interest rate, paid in the first day of the following quarter.
- **SmallFish** can make short-term investments at the beginning of the quarter at 3% annual interest rate, paid in the first day of the following quarter.
- Current long-term funding is secured at 7% annual interest rate, paid annually in the beginning of Q3. No changes are expected nor principal repayments are allowed.
- For simplification purposes, do not assume any interest compounding effect

2. Other Assumptions

- Assume that each quarter has 90 days.
- Both Sales and Purchases of DM's are subject to **VAT of 20%**.
- SmallFish uses **FIFO** as its inventory management system.
- SmallFish uses **Variable Costing** as its cost accumulation system.

3. Opening Balances

Opening Balances	**Q1**
Cash	8 000
FG Inventory	15 000
ST Loans	0

4. Master Budget

Sales Budget	**Q1**	**Q2**	**Q3**	**Q4**	**2024**
Price	18 €	20 €	20 €	20 €	

Inventory FG (units)	**Q1**	**Q2**	**Q3**	**Q4**	**2024**
Opening	1 500	1 905	2 805	2 055	1 500
Production	3 280	3 475	3 500	3 500	13 755
Sales	2 875	2 575	4 250	3 500	9 700
Closing	1 905	2 805	2 055	2 055	2 055

COGM Budget	**Q1**	**Q2**	**Q3**	**Q4**	**2024**
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 €**
COGM per unit	*11.6 €*	*11.8 €*	*12.0 €*	*12.0 €*	

Fixed Costs Budget	**Q1**	**Q2**	**Q3**	**Q4**	**2024**
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 €*

VAT Balance	**Q1**	**Q2**	**Q3**	**Q4**	**2024**
VAT Collectible	10 350 €	10 300 €	17 000 €	14 000 €	37 650 €
VAT Paid	1 980 €	2 790 €	2 800 €	3 400 €	7 570 €
VAT Payable to Govt	**8 370 €**	**7 510 €**	**14 200 €**	**10 600 €**	**30 080 €**

Operating Cash Balance	Q1	Q2	Q3	Q4	2024
Operating Cash Balance	**-3 868 €**	**-7 745 €**	**24 010 €**	**6 600 €**	**18 997 €**

Balance Sheet	Q1	Q2
ASSETS		
Plant, Property and Equipment	35 000 €	31 000 €
Non-Current Assets	**35 000 €**	**31 000 €**
Direct Materials Inventory	6 950 €	7 000 €
Finished Goods Inventory	22 098 €	33 099 €
Accounts Receivables	10 350 €	10 300 €
Cash	13 132 €	13 252 €
Total Current Assets	**52 530 €**	**63 651 €**
Total Assets	**87 530 €**	**94 651 €**
EQUITY		
Share Capital	20 000 €	20 000 €
Retained Earnings	25 015 €	22 906 €
Total Equity	**45 015 €**	**42 906 €**
LIABILITIES		
Long Term Loan	20 000 €	20 000 €
Payables to Suppliers	3 960 €	5 580 €
ST Loans	9 000 €	17 000 €
Interest Payable	1 185 €	1 655 €
VAT Payable to State	8 370 €	7 510 €
Total Liabilities	**42 515 €**	**51 745 €**
Total Equity and Liabilities	87 530 €	94 651 €

8.1) Prepare the Financial Budget for Q3 and Q4. Present all the relevant calculations in the answer sheet, while filling the table you can find below.

CALCULATIONS ON PAPER, FILL THE FINANCIAL BUDGET BELOW (ROUNDED TO UNITS AND NO WHITESPACE, e.g, 1234.56 >>> 1235)

Financial Budget	Q3	Q4
Opening Cash	1 0	2 0
Positive Cash Balance	3 0	4 0
ST Borrowing	5 0	6 0
LT Borrowing	7 0	8 0
Sale of Short Term Investments	9 0	10 0
Interest Received	11 0	12 0
Total Sources	13 0	14 0
Closing Cash	15 0	16 0
Negative Cash Balance	17 0	18 0

Interest on Loans	19 0	20 0
Short Term Loan Reimbursment	21 0	22 0
Long Term Loan Reimbursement	23 0	24 0
Short Term Investments	25 0	26 0
Total Uses	27 0	28 0

Correct answers:

1 13252 2 20607 3 24010 4 6600 5 0 6 0 7 0 8 0 9 0 10 0 11 0 12 0

13 37262 14 27207 15 20607 16 17177 17 0 18 0 19 1655 20 30 21 15000 22 2000 23 0

24 0 25 0 26 8000 27 37262 28 27207

8.2) Prepare the **P&L Budgeted for Q3 and Q4**. Present all the relevant calculations in the answer sheet, while filling the table you can find below. Round to the nearest unit.

Note: **Only** if you were unable to do question 6.1, please consider the information below.

	Q1	Q2	Q3	Q4
Outstanding Loans ST	9 000 €	17 000 €	20 000 €	0 €
Outstanding Loans LT	20 000 €	20 000 €	20 000 €	20 000 €
Outstanding ST Investments	0 €	0 €	0 €	2 000 €

CALCULATIONS ON PAPER, FILL THE P&L BELOW (ROUNDED TO UNITS AND NO WHITESPACE, e.g, 1234.56 >>> 1235)

Budgeted P&L	**2024 Q3**	**2024 Q4**
Sales Revenues	1 0	2 0
COGS	3 0	4 0
Gross Profit	5 0	6 0
UROH	7 0	8 0
SG&A	9 0	10 0
EBIT	11 0	12 0
Financial Revenues	13 0	14 0
Financial Expenses	15 0	16 0
PBT	17 0	18 0

Correct answers:

1 85000 2 70000 3 50439 4 42000 5 34561 6 28000 7 15000 8 15000 9 8000 10 8000

11 11561 12 5000 13 0 14 60 15 380 16 350 17 11181 18 4710

6.1)

CM per Scarce Resource

CM M&A = (20 000 – 4 000 – 1 000)/12 = 15 000/12 = 1 250€ (**1st Priority**)

CM IP = (18 500 – 2 000 – 1 5000)/20 = 15 000/20 = 750€ **(2nd Priority)**

CM CL = (8 000 – 1 000 – 2 600)/10 = 4 400/10 = 440€ (**3rd Priority)**

Prioritization

Cases M&A = min {8, 720/12} = 8 cases

Cases IP = min {20, (720 – 8 * 12)/20} = 20 cases

Cases CL = min {35, (720 – 8 * 12 – 20 * 20)/10} = 22 cases

Profit Calculation

Maximum Profit = 8 * 15 000€ + 20 * 15 000€ + 22 * 4 400€ - 3 * 50 000€ - 20 000€ = 346 800€

6.2)

The minimum price is such that the incremental profit of taking the case is 0.

Given that 300 hours are required, PS&L must forego 22 cases of CL (220 hours) + 4 cases of IP (80 hours), losing the CM of this cases

Relevant Revenues:

Keeping McKernon Motors = 100 000€

Amount Charged to McKernon = *x€*

Relevant Costs:

Miscellaneous Costs = 20 000€

Opportunity Cost = 4 * 15 000€ + 22 * 4 400€ = 156 800€

100 000€ + x€ = 20 000€ +156 800€ ⇔ x€ = 76 800€

7.1)

Total MOH's = 120 000€ + 80 000€ + 50 000€ + 30 000€ = 280 000€

SOR = 280 000€/ (17 500€ + 22 5000€) = 7€/DL hour

COGM X = 7 000€ + 17 500€ + 17 500€ * 7€ - (200€ – 750€) = 147 550€

7.2)

Maintenance provides 100/900 to Factory Administration – **Disregard**

Factory Administration provides 100/800 to Maintenance – **Consider**

Step Down Method	***Machining***		***Assembly***		***Maintenance***		***FA***		***TOTAL In €***	
	Mhs	***1500 MHs***	***Mh***	***800 DLHs***	***h***	***900 h***	***emp***	***80 emp***		
	Q	***V***	***Q***	***V***	***Q***	***V***	***Q***	***V***		
Direct Costs		120 000		80 000		50 000		30 000	280 000	
2-Reallocation of service centres costs										**Q Total**
Maintenance	600	40 312.5	200	13 437.5					53 750	800
FA	25	9 375.0	45	16 875.0	10.0	3 750.0			30 000	80
Total Cost		**169 687.5**		**110 312.5**		**53 750.0**		**30 000**	**280 000**	
per Unit of Work		113.13		137.89		67.19		375		

COGM X = 7 000€ + 17 500€ + 113.13€ * 900h + 137.89€ * 550h - (200€ - 750€) = 202 702.34€

8.1)

Interest Payment Q3 = 20 000 * 0.07 + 17 000 * 0.06/4 = 1 655€

Interest Payment Q4 = 2 000 * 0.06/4 = 30€

See values above

8.2)

Sales Revenues Q3 = 4 250 * 20€ = 85 000€

Sales Revenues Q4 = 3 500 * 20€ = 70 000€

COGS Q3 = 2 805 * 11.8€ + (4 250 – 2 805) * 12€ = 50 439€

COGS Q4 = 3 500 * 12€ = 42 000€

Financial Revenues Q4 = 8 000 * 0.03/4 = 60€

Financial Expenses Q3 = 20 000 * 0.07/4 + 2 000 * 0.06/4 = 380€

Financial Expenses Q4 = 20 000 * 0.07/4 = 350€