4 R Limited uses absorption costing at one of its factories. This factory has two production departments: Machining and Assembly, and two service departments: Support and Canteen.

Some budgeted overheads have already been apportioned for April 2022. The remaining budgeted overheads for April 2022 are as follows:

	$
Depreciation of machinery	25 000
Production departments' supervisor's wages	19 800

The following additional information is available.

1

	Production departments		Service departments	
	Machining	Assembly	Support	Canteen
Floor area (m^2)	7000	2000	400	600
Power (Kwh)	4500	1800	300	900
Machinery cost ($)	850 000	110 000	15 000	25 000
Number of employees	75	35	8	7

2 The canteen provides meals for staff in the Machining, Assembly and Support departments.

3 The Support department's overheads should be reapportioned on the basis of production departments' machinery cost.

REQUIRED

(a) Complete the following table showing the apportionment of overheads and the reapportionment of service department overheads.

	Production departments		Service departments	
	Machining	Assembly	Support	Canteen
	$	$	$	$
Overheads already apportioned	106 350	28 600	7 180	13 870
Depreciation of machinery				
Production departments' supervisor's wages				
Reapportioned Canteen				
Reapportioned Support				
Total				

[5]

Additional information

	Machining	Assembly
Direct labour hours per month	3200	2400
Machine hours per month	5600	1800

REQUIRED

(b) Calculate the overhead absorption rate for **each** production department to **two** decimal places.

Machining

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Assembly

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[4]

(c) State **two** reasons why overheads may be under-absorbed.

1 ....

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2 ....

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[2]

Additional information

At another factory a single product is made. This factory uses marginal costing.

The following information is available.

	$
Direct materials per unit	8.80
Direct labour per unit	10.10
Selling price per unit	27.00
Fixed costs per month	$44 000
Production capacity per month	15 000 units

The factory has been operating at below its normal capacity. However, recently demand for the company's product has increased considerably. The directors believe there is an opportunity to increase profits. They are considering two options to meet increased demand.

Option 1

1 Increase the selling price per unit by 5%.

2 Increase production to 16 000 units per month.

3 Overtime is paid at an additional $4.10 per unit.

4 Reduce monthly advertising by $2 000.

Option 2

1 Increase production capacity per month by 15% by purchasing additional machinery costing $78 000. This machinery will be depreciated at 20% per annum.

2 Selling price will remain at $27 per unit.

3 The supplier of materials currently offers a trade discount of 20%. This will increase to 30%.

4 The additional machinery will be more efficient and production will **not** require any overtime working.

REQUIRED

(d) Calculate the monthly profit to be made for each option.

(i) Option 1

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[5]

(ii) Option 2

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[5]

Additional information

The cost of the additional machinery required in Option 2 would be financed by an issue of ordinary shares.

REQUIRED

(e) Advise the directors which option they should choose. Justify your answer by considering **both** financial and non-financial factors.

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[5]

(f) (i) State **two** benefits of budgetary control.

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2 ....

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[2]

(ii) State **two** limitations of budgetary control.

1 ....

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2 ....

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[2]