

Ratio Analysis



Analysis and communication of accounting information

Calculation and evaluation of ratios

Candidates should have an understanding of:

- how to calculate key accounting ratios to measure profitability, liquidity and efficiency:
 - profitability ratios: gross profit margin, mark-up, profit margin, return on capital employed, expenses to revenue ratio (operating expenses to revenue ratio)
 - liquidity ratios: current ratio, acid test ratio
 - efficiency ratios: non-current asset turnover, trade receivables turnover (days), trade payables turnover (days), inventory turnover (days), rate of inventory turnover (times)

Note: Candidates must use the formulae given in the appendix to section 3. These are the only formulae accepted in candidate responses.

- how to evaluate the profitability, liquidity and efficiency of an organisation by interpreting ratios
- possible measures to improve the profitability, liquidity and efficiency of an organisation
- the limitations of accounting information

Candidates are expected to use their understanding of the calculation and evaluation of ratios to make informed business decisions using relevant information.

Profitability ratios

Gross profit margin (%)	$\frac{\text{Gross profit}}{\text{Revenue}} \times 100$
Mark-up (%)	$\frac{\text{Gross profit}}{\text{Cost of sales}} \times 100$
Profit margin (%)	$\frac{\text{Profit for the year}}{\text{Revenue}} \times 100$ can also be expressed as $\frac{\text{Profit for the year (after interest)}}{\text{Revenue}} \times 100$
Return on capital employed (%)	$\frac{\text{Profit from operations}}{\text{Capital employed}} \times 100$ Capital employed = issued shares + reserves + non-current liabilities
Expenses to revenue ratio (%)	$\frac{\text{Expenses}}{\text{Revenue}} \times 100$
Operating expenses to revenue ratio (%)	$\frac{\text{Operating expenses}}{\text{Revenue}} \times 100$

Liquidity ratios

Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$ <i>Answer presented as a ratio</i>
Acid test ratio	$\frac{\text{Current assets} - \text{inventory}}{\text{Current liabilities}}$ <i>Answer presented as a ratio</i>

Efficiency ratios

Non-current asset turnover (times)	$\frac{\text{Net revenue}}{\text{Total net book value of non-current assets}}$
Trade receivables turnover (days)	$\frac{\text{Trade receivables}}{\text{Credit sales}} \times 365 \text{ days}$
Trade payables turnover (days)	$\frac{\text{Trade payables}}{\text{Credit purchases}} \times 365 \text{ days}$
Inventory turnover (days)	$\frac{\text{Average inventory}}{\text{Cost of sales}} \times 365 \text{ days}$
Rate of inventory turnover (times)	$\frac{\text{Cost of sales}}{\text{Average inventory}}$

- 3 The directors of B Limited have provided the following information.

Statement of financial position at 31 December 2020

Assets	\$
Non-current assets	656 000
Current assets	
Inventory	34 000
Trade receivables	31 000
	<u>65 000</u>
Total assets	<u>721 000</u>
Equity and liabilities	
Equity	
Issued share capital	500 000
Share premium	67 000
Retained earnings	68 000
Total equity	<u>635 000</u>
Non-current liabilities	
8% Debenture (2025)	50 000
	<u>50 000</u>
Current liabilities	
Trade payables	19 000
Cash and cash equivalents	17 000
	<u>36 000</u>
Total liabilities	<u>86 000</u>
Total equity and liabilities	<u>721 000</u>

- 1 The company's revenue for the year ended 31 December 2020 was \$540 000 of which 60% was on credit.
- 2 The company's profit for the year was \$80 000.

REQUIRED

- (a) Calculate the following ratios at 31 December 2020.
- (i) Current ratio (to **two** decimal places)

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[1]

(ii) Trade receivables turnover (days)

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(iii) Return on capital employed (to **two** decimal places)

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Additional information

The following ratios are available for **2019** along with comparative ratios for **2018**.

	At 31 December 2019	At 31 December 2018
Current ratio	2.20 : 1	2.10 : 1
Trade receivables turnover	37 days	38 days
Return on capital employed	15.57%	14.32%

REQUIRED

(b) Compare the company's position at 31 December **2020** with that of the previous two years in regard to the following ratios:

(i) Current ratio

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(ii) Trade receivables turnover (days)

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(iii) Return on capital employed

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(c) State **two** ways in which a company could improve its current ratio.

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Additional information

Companies compare their financial performance with that of different businesses.

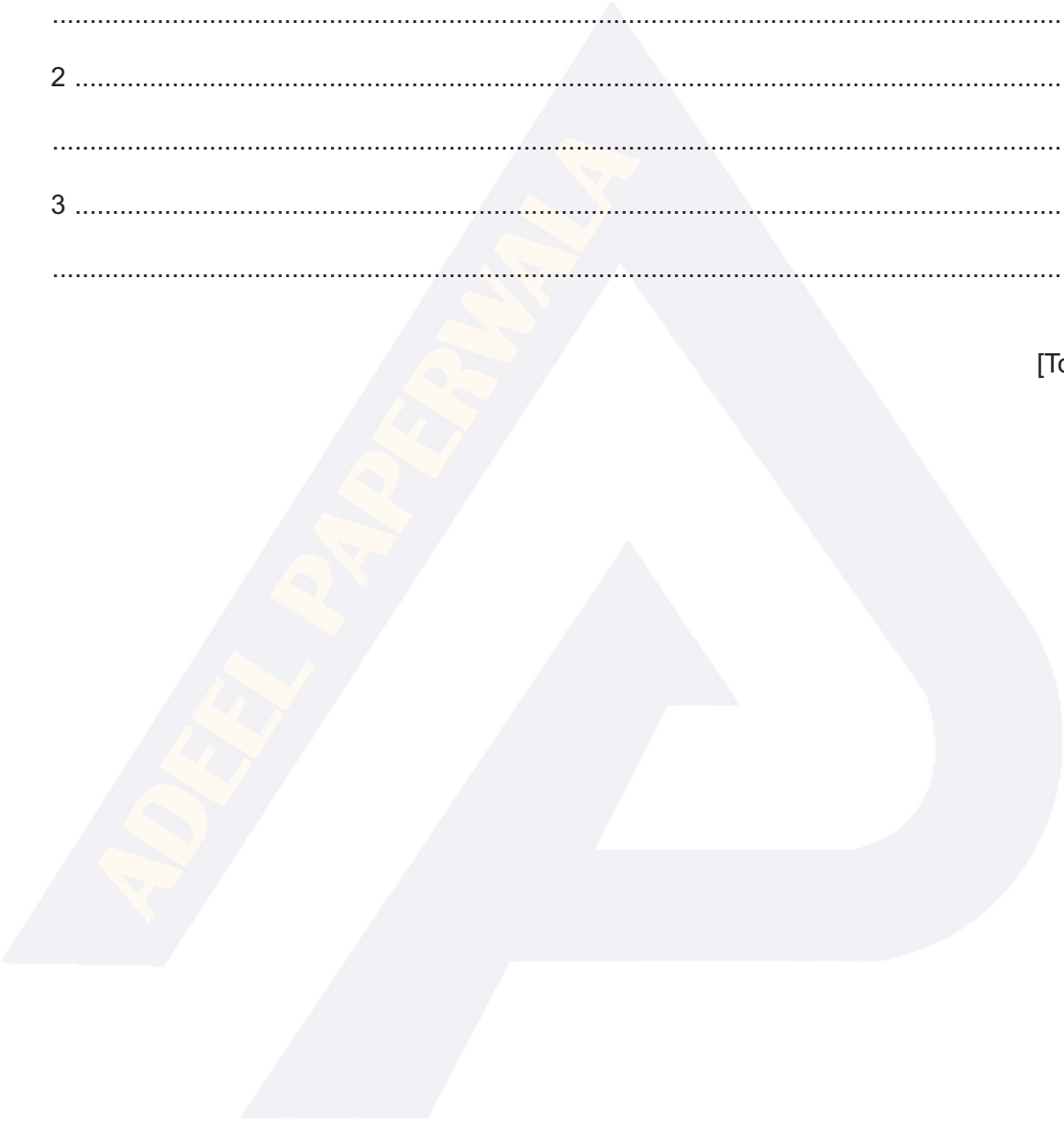
REQUIRED

(d) State **three** limitations of comparing the financial performance of different businesses.

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[3]

[Total: 15]



Additional information

The directors make use of accounting ratios to interpret the information contained within the financial statements.

REQUIRED

(e) (i) State the formula for calculating the non-current asset turnover.

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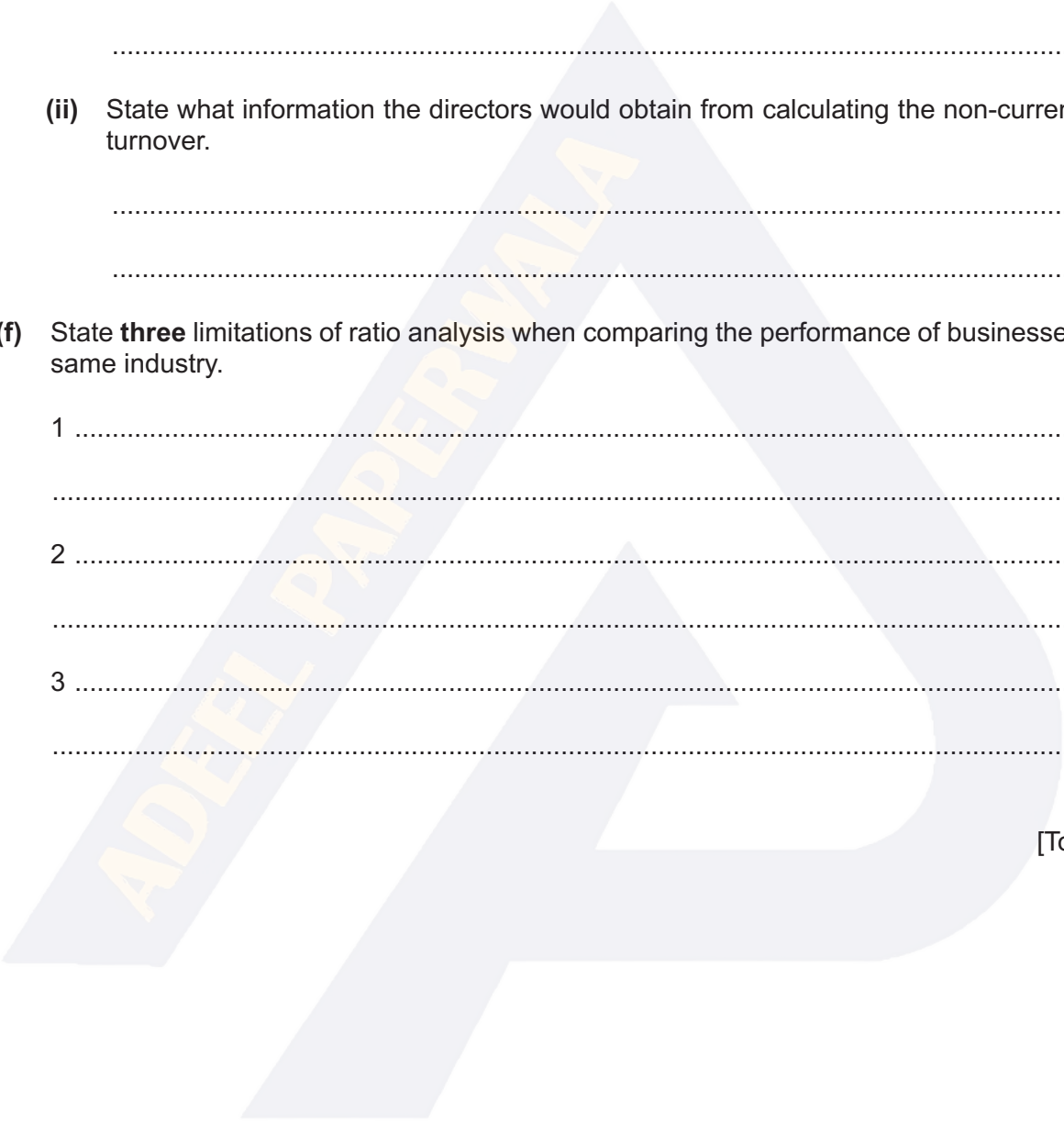
(ii) State what information the directors would obtain from calculating the non-current asset turnover.

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(f) State **three** limitations of ratio analysis when comparing the performance of businesses in the same industry.

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[Total: 30]



2 Ayesha has provided the following extracts from her business's financial statements.

Extract from the Income Statement for the year ended 31 December 2019

	\$	\$
Revenue		145 500
Opening inventory	11 440	
Purchases	<u>120 120</u>	
	131 560	
Closing inventory	<u>14 560</u>	
Cost of sales		<u>117 000</u>
Gross profit		<u>28 500</u>

Extract from the Statement of Financial Position at 31 December 2019

	\$
Current assets	
Inventory	14 560
Trade receivables	9 300
Cash and cash equivalents	<u>4 240</u>
	<u>28 100</u>
Current liabilities	
Bank overdraft	8 000
Trade payables	<u>10 400</u>
	<u>18 400</u>

All purchases are on credit. Two-thirds of all sales are on a credit basis.

REQUIRED

(a) Calculate the following ratios. State the formula used.

(i) Trade payables turnover (in days)

Formula

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Calculation

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(ii) Trade receivables turnover (in days)

Formula

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Calculation

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(iii) Current ratio (to **two** decimal places)

Formula

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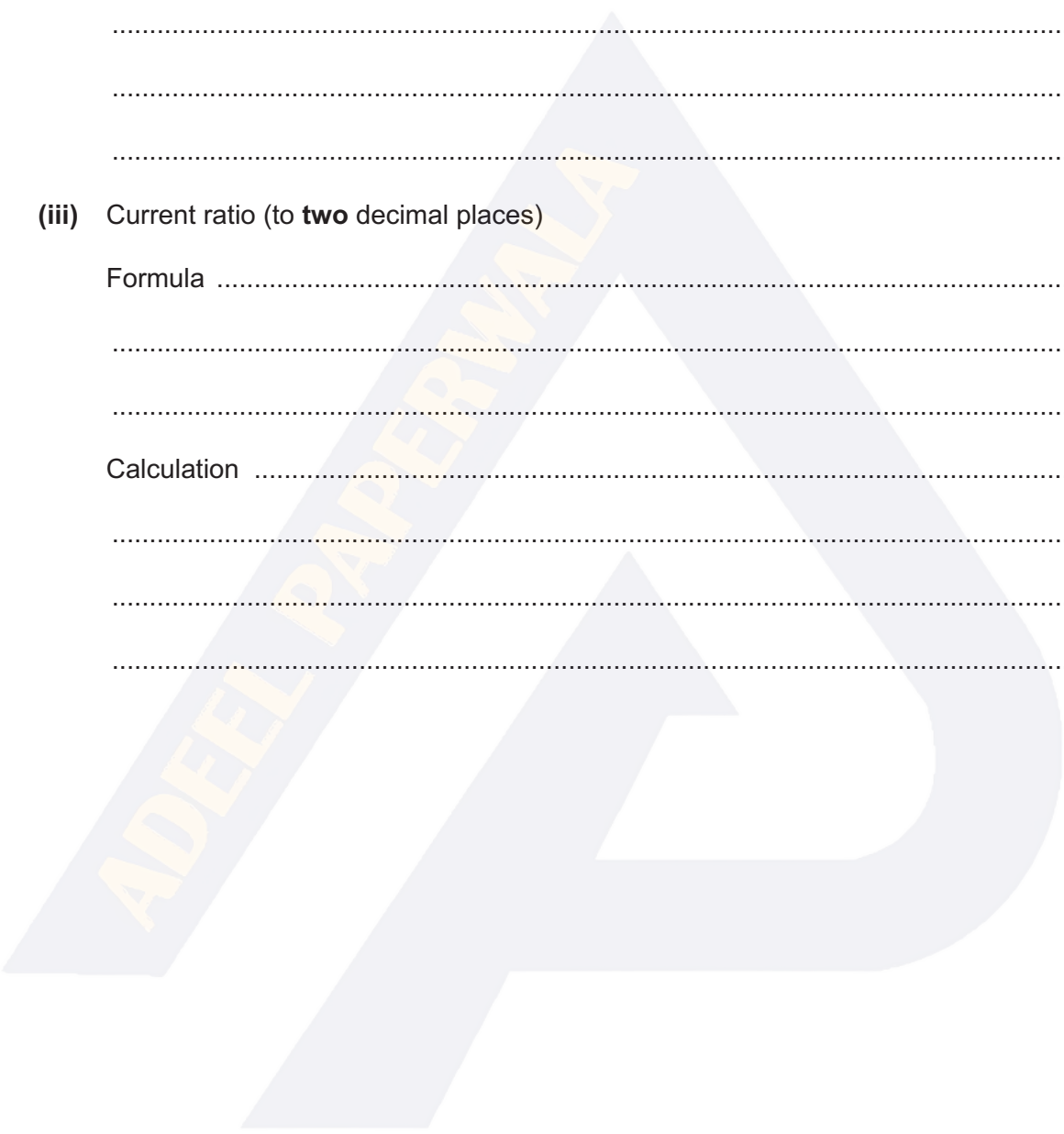
Calculation

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[6]



(c) State **two** factors that should be considered when choosing businesses with which to compare a business.

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[Total: 15]



(d) (i) Explain how a business may increase its gross margin.

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(ii) Explain how a business may improve its profit margin.

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3 Giles, a sole trader, provided the following information for the year ended 31 March 2020.

- 1 Closing inventory was valued at \$40 250 which was 15% higher than the opening inventory.
- 2 Rate of inventory turnover was 8 times.
- 3 Gross margin was 30%.
- 4 All sales and purchases were made on credit.
- 5 Trade receivables at 31 March 2020 were \$38 000 **before** accounting for an irrecoverable debt of \$2000 and an allowance for doubtful debts which is maintained at 3.5% of trade receivables.
- 6 Trade payables at 31 March 2020 were \$22 000.

REQUIRED

(a) Calculate the sales for the year ended 31 March 2020.

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(b) Calculate the trade receivables turnover (days).

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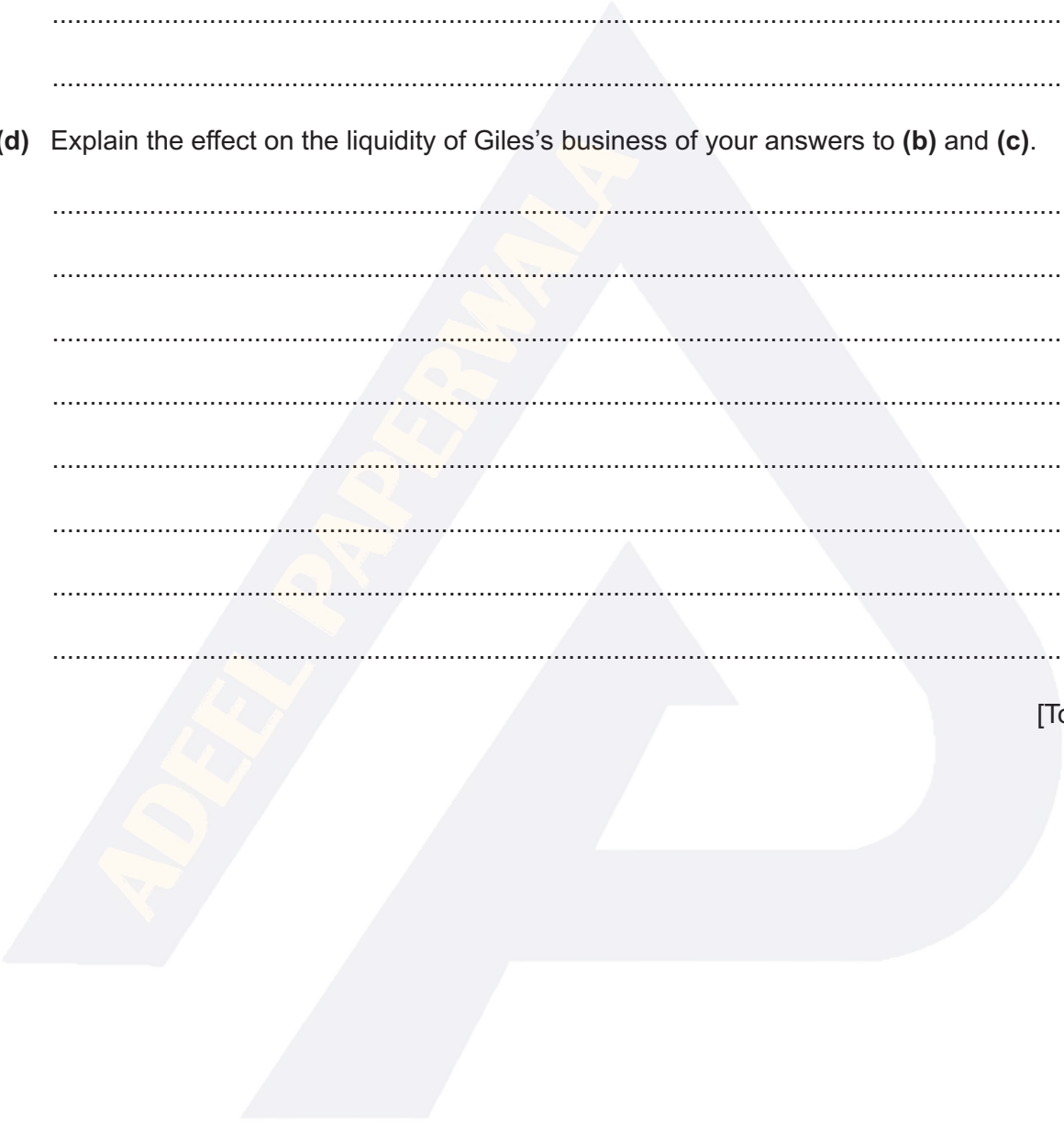
(c) Calculate the trade payables turnover (days).

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(d) Explain the effect on the liquidity of Giles’s business of your answers to (b) and (c).

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[Total: 15]



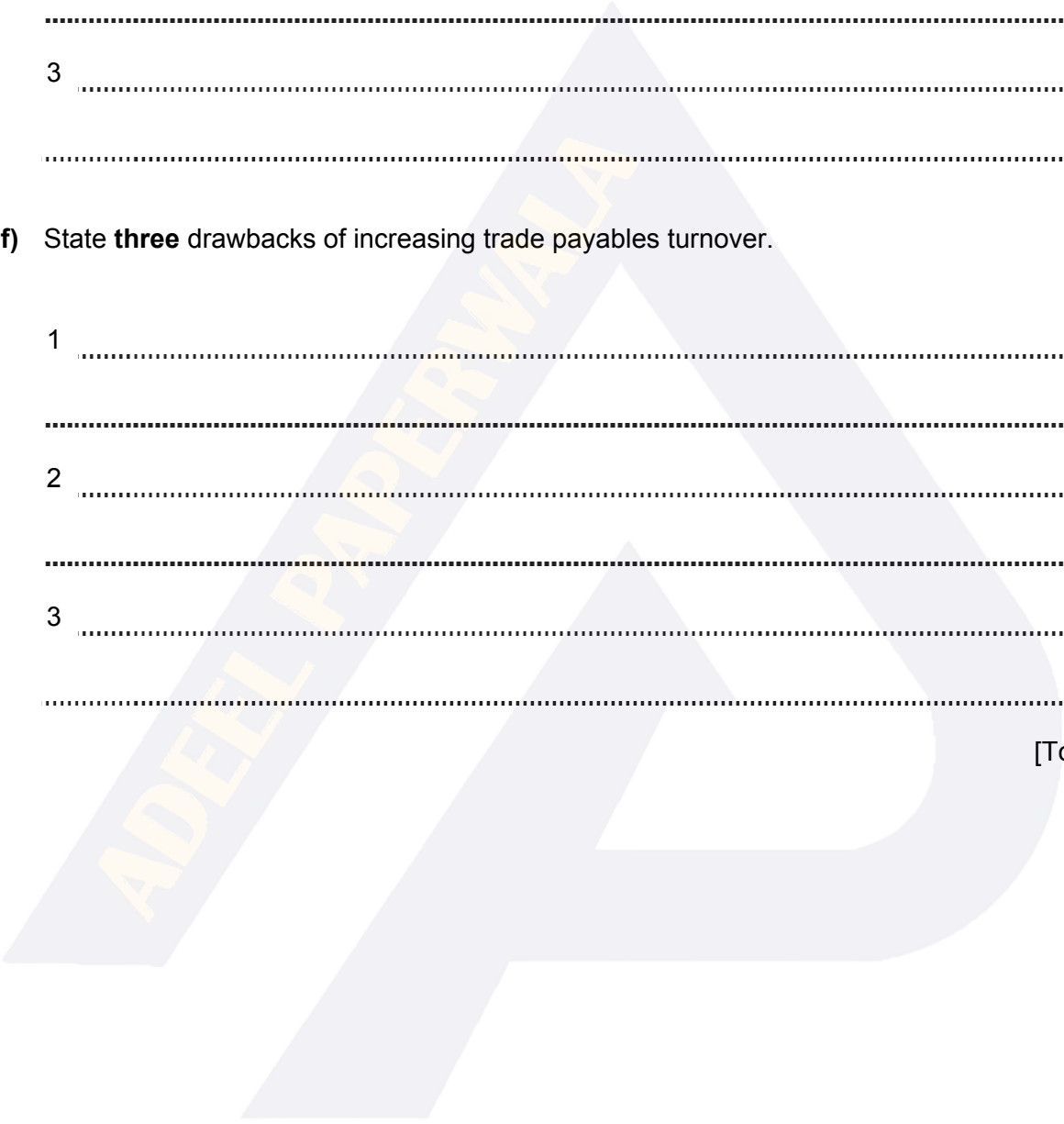
(e) State **three** ways in which a business could reduce trade receivables turnover.

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(f) State **three** drawbacks of increasing trade payables turnover.

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[Total: 30]



X Limited is a wholesaler of sports goods. The directors of the company have provided the following information for the year ended 30 April 2019.

	\$
Revenue	742 630
Cost of sales	(459 991)

- 1 For the year ended 30 April 2019 the rate of inventory turnover was 7.5 times. The value of inventory at 1 May 2018 was \$57 682.
- 2 At 30 April 2019 the trade receivables turnover was 35 days and the trade payables turnover was 32 days.
- 3 All sales are made on credit. Credit purchases amounted to 80% of the value of cost of sales.

REQUIRED

(b) Calculate at 30 April 2019:

(i) closing inventory

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(ii) trade receivables

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(iii) trade payables.

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Additional information

The directors of AB Limited use ratio analysis to assess the performance of the business.

REQUIRED

(e) Name **two** ratios that a business may use to assess:

(i) profitability

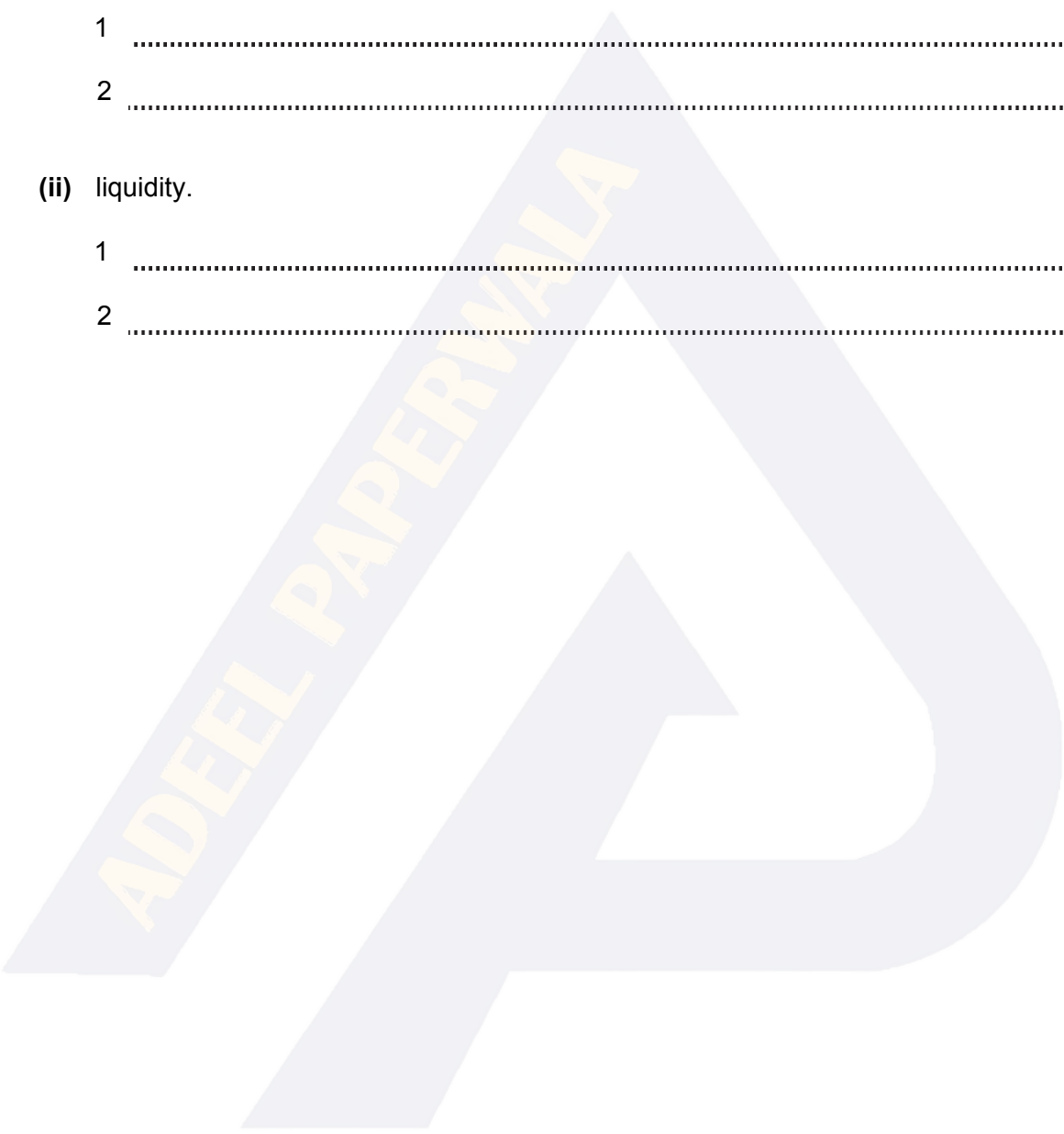
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(ii) liquidity.

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2 [2]



2 Nibali has provided the following information for the year ended 31 July 2019.

	\$
Closing inventory	50 000
Opening inventory	30 000
Revenue	750 000
Trade receivables	65 000
Trade payables	31 850

Cash sales are 10% of total revenue.

Cash purchases are 25% of total purchases.

Gross margin is 20%.

Nibali's standard credit terms with both customers and suppliers are 30 days.

Industry average inventory turnover is 15 days.

REQUIRED

(a) Calculate:

(i) inventory turnover in days

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(ii) trade receivables turnover in days

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(iii) trade payables turnover in days.

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(b) Discuss the liquidity of Nibali’s business based on the available information.

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(c) Identify **three** drawbacks for a business of holding too much inventory.

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[Total: 15]

- 3 Maria is a sole trader. Her financial statements for the year ended 31 December 2018 included the following:

	\$
Revenue	163 000
Gross profit	42 700
Profit for the year	16 500
Inventory 1 January 2018	17 800
Inventory 31 December 2018	19 600
Trade receivables	15 900
Cash and cash equivalents	2 700
Trade payables	10 700
Capital	130 000

REQUIRED

- (a) Calculate the following ratios to **two** decimal places:

- (i) gross margin

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- (ii) profit margin

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- (iii) rate of inventory turnover (in times)

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(iv) current ratio

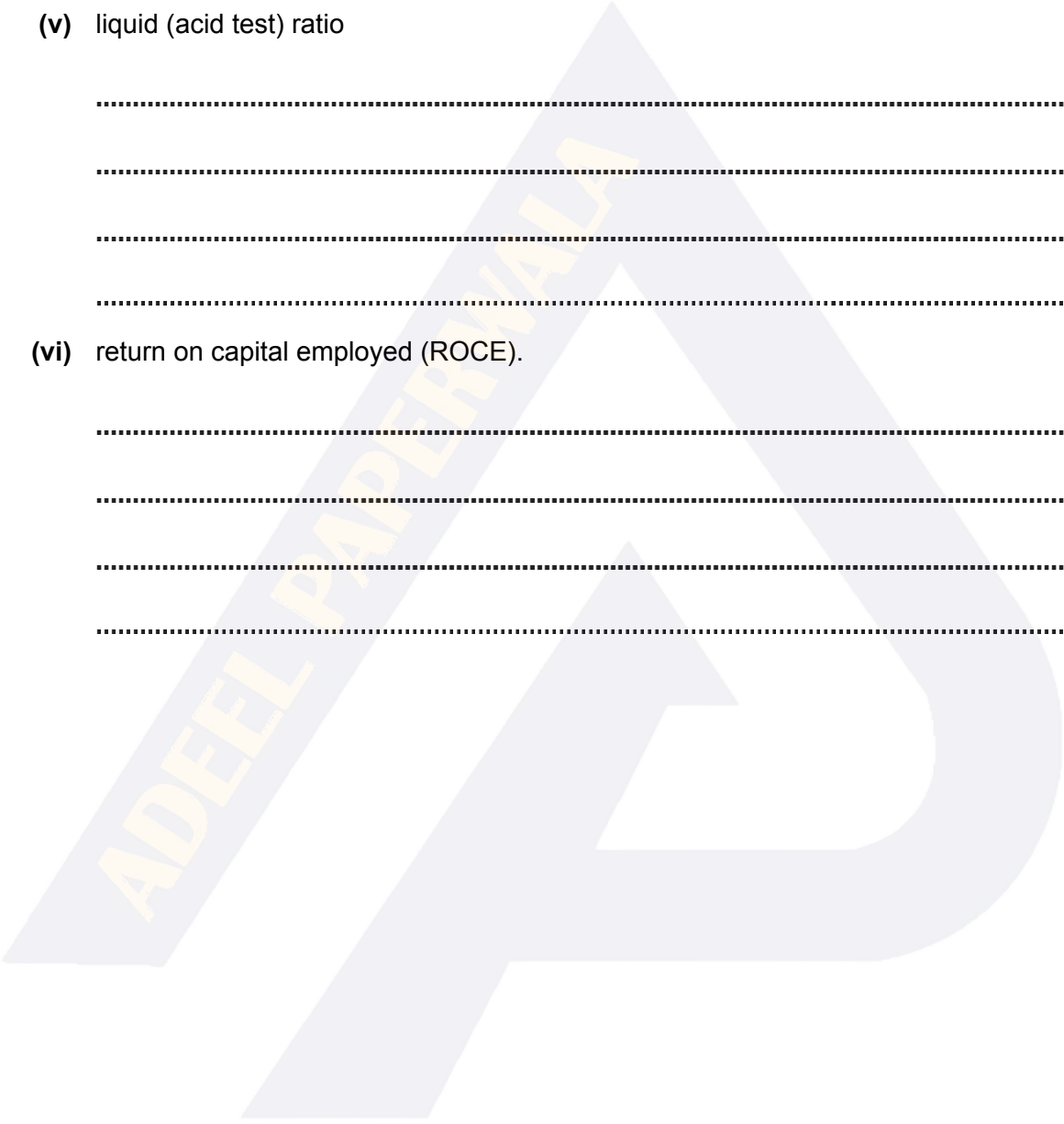
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(v) liquid (acid test) ratio

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(vi) return on capital employed (ROCE).

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Additional information

Maria's ratios for 2017 were as follows:

1	Gross margin	23.63%
2	Profit margin	12.05%
3	Rate of inventory turnover	7.36 times
4	Current ratio	3.85 : 1
5	Liquid (acid test) ratio	2.04 : 1
6	ROCE	14.65%

REQUIRED

(b) Suggest possible reasons for the changes in Maria's business between 2017 and 2018 in respect of:

(i) profitability

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(ii) liquidity.

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3 Anna has obtained the following data at 31 December 2016 in respect of Ravi, a possible new customer.

	\$	
Trade receivables	20 640	
Cash and cash equivalents	4 840	debit
Inventory	38 100	
Trade payables	28 760	

Other figures obtained are:

Sales for the year	331 750
Inventory at 1 January 2016	46 200

Ravi has a mark-up of 25%.

REQUIRED

(a) Calculate the following ratios for Ravi's business to **two** decimal places:

(i) Current ratio

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(ii) Liquid (acid test) ratio

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(iii) Rate of inventory turnover

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Additional information

Anna has also obtained the following data in respect of Yuan, another possible customer.

Current ratio	3.82 : 1
Liquid (acid test) ratio	1.63 : 1
Rate of inventory turnover	6.69 times per year

Anna's main concern when choosing the customer is that they should pay her promptly.

REQUIRED

(b) Advise Anna which customer she should choose. Justify your answer.

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(c) State **three** limitations to a business of using ratio analysis.

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[Total: 15]

3 H Limited provided the following information for its most recent year of trading.

	\$
Cash sales	10 600
Credit sales	81 900
Purchases (all credit)	77 800
Purchases returns	1 600
Administrative and distribution expenses	14 800
Opening inventory	4 300
Closing inventory	6 500

H Limited calculates a number of different ratios to analyse its results each year.

REQUIRED

(a) Explain the difference between gross margin and mark-up.

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 [2]

(b) (i) Name **one** cost recorded in an income statement which would **not** be included in the calculation of the expenses to revenue ratio.

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(ii) Name **two** costs which might be included in the administrative expenses of a limited company.

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(c) Calculate the following ratios for the year.

(i) gross margin

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(ii) expenses to revenue

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(iii) profit margin

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(d) State how the **three** ratios calculated in (c) are related.

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(e) Suggest **two** reasons why H Limited's gross margin may have been **higher** than the previous year.

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[Total: 15]

(d) Calculate, to **two** decimal places, the following ratios at 30 June 2016. State the formula used in each case.

(i) Current ratio

Formula

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(ii) Liquid (acid test) ratio

Formula

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(e) (i) Name **two** other ratios a business could calculate to explain its liquidity position.

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2 [2]

(ii) State **two** limitations of using ratio analysis.

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Razia's brother has suggested that Razia should increase the mark-up on her goods.

REQUIRED

(f) Advise Razia whether or not she should increase the mark-up on her goods. Justify your answer by discussing advantages and disadvantages of doing this.

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- (b) Suggest **two** reasons why the balance on a retained earnings account may be lower than the profit for the year.

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- (c) Calculate the following ratios.

- (i) Rate of inventory turnover (to **two** decimal places)

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- (ii) Liquid (acid test) ratio (to **two** decimal places)

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- (iii) Trade payables turnover (days)

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Additional information

The following information is available for XY Limited, a competitor of AB Limited.

Rate of inventory turnover	8.75 times
Liquid (acid test) ratio	0.85 : 1
Trade payables turnover (days)	42 days

REQUIRED

- (d) Discuss the performance of AB Limited by comparing the ratios calculated in part (c) with those of XY Limited.

Rate of inventory turnover

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Liquid (acid test) ratio

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Trade payables turnover (days)

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2 Wiggins has provided the following summary financial information for the year ended 30 April 2017:

	\$
Bank overdraft	19 000
Cash in hand	1 725
Inventory at 1 May 2016	?
Inventory at 30 April 2017	152 000
Purchases	860 000
Revenue	1 042 500
Trade receivables	31 275

Additional information

- 1 40% of sales are on a cash basis. All remaining sales are on a credit basis.
- 2 All purchases are on credit.
- 3 The gross margin on all sales was 20%.
- 4 The trade payables turnover (days) for the year ended 30 April 2017 was 54.75 days (to two decimal places).

REQUIRED

(a) State **two** limitations of using ratio analysis to analyse the performance of a business.

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(b) Calculate the current ratio to **two** decimal places.

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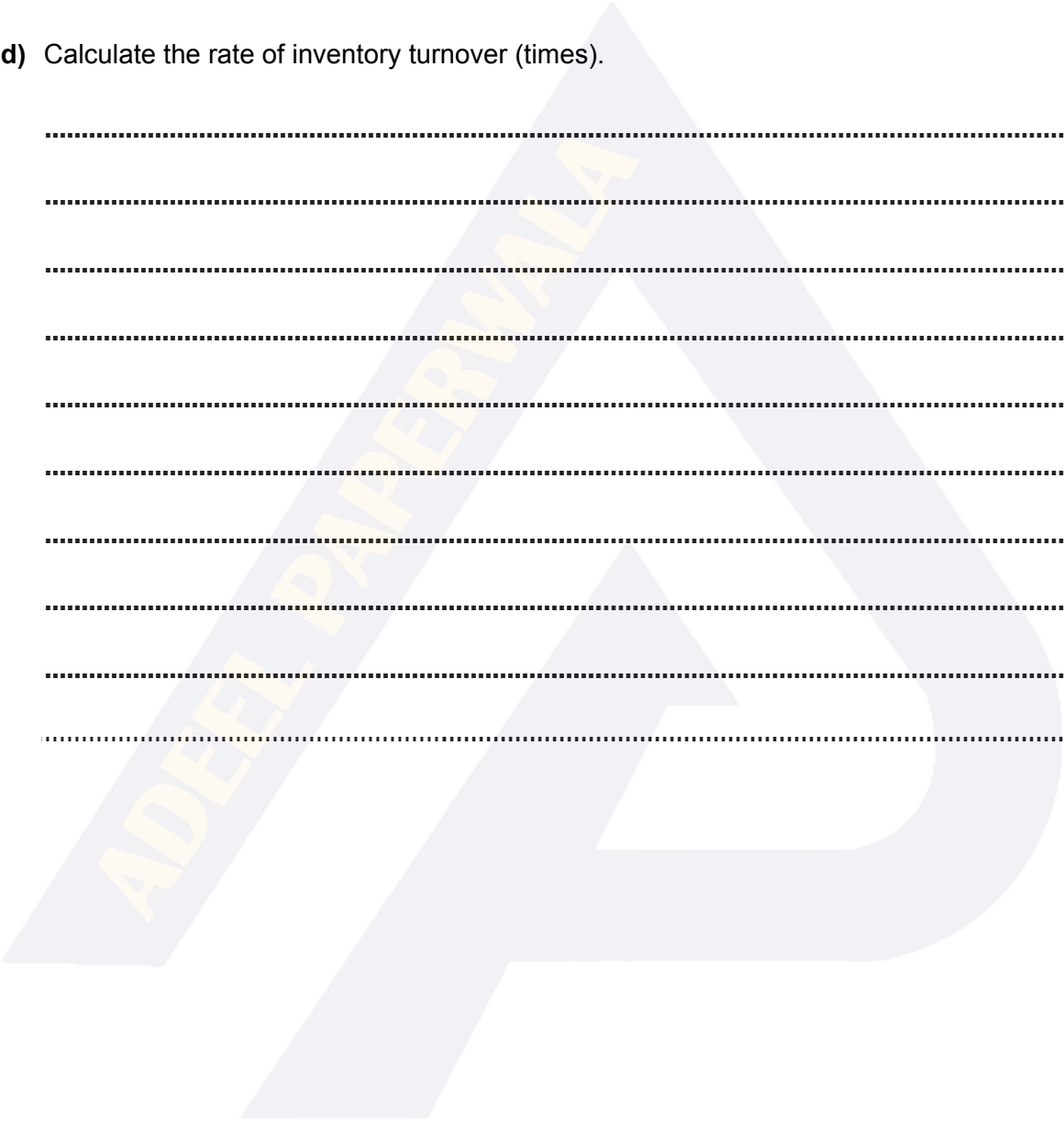
..... [4]

(c) Calculate the liquid (acid test) ratio to **two** decimal places.

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(d) Calculate the rate of inventory turnover (times).

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(c) Calculate the trade payables turnover (days). State the formula used.

Formula

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Calculation

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(d) State **three** uses of ratio analysis to a trader.

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[Total: 15]

