

## Quantitative topics from past papers (Business studies – June exams)

### Business studies (2016 – Unit 1 – Question 1)

Jack Stocker is 10 years old. Recently Jack sold 80 blueberry cakes at a price of 75p each. The cost of ingredients was £25 and Jack's father, David, estimated that total expenses were £5. What was Jack's **operating profit margin**?

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### Business studies (2016 – Unit 2 – Question 1)

London Wasps plays Rugby Union at Adams Park, a ground with a capacity of 10,000. All tickets are sold for every game. London Wasps raise the ticket price by 5%. Discuss under what circumstances the revenue would increase or decrease. Use the **PED** in your discussion.

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**Business studies (2016 – Unit 4 – Question 5)**

**Evidence D – Extract from New Balance UK accounts**

<u>Profit and Loss</u>	<b>2013</b>	<b>2012</b>
	(£)	(£)
Turnover	46 939 150	36 434 107
Cost of Sales	35 070 816	28 061 935
Gross Profit	11 868 334	8 372 172
Operating (Loss) Profit	1 057 688	(213 044)
<u>Balance Sheet</u>		
Fixed Assets	2 046 711	1 851 727
Current Assets	27 901 319	20 014 948
Stock	12 137 301	8 611 341
Current Liabilities	27 173 413	13 913 126
Capital Employed	2 774 617	7 953 549

Using Evidence D, calculate New Balance UK's **Acid Test Ratio** for 2012 and 2013.

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Comment on the results of your calculations

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**Business studies (2015 – Unit 1 – Question 4)**

Adidas, the world's second biggest sportswear firm, reported that in the first three months of 2013, operating profits rose by 6% to 308m euro and the gross profit margin was 50.1%. Calculate the **operating profits** during the previous three months.

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**Business studies (2015 – Unit 4 – Question 5)**

Using Evidence D, calculate Center Parcs’ **Gross Profit Margin** and **Net Profit Margin** for 2012 and 2013.

**Evidence D**

**Summary of Income statement 2012–2013 (Center Parcs Holdings Ltd)**

	<b>2013</b>	<b>2012</b>
	£ (million)	£ (million)
Revenue	303.5	291.7
Cost of Sales	31.4	34.1
Gross Profit	272.1	257.6
Expenses	161	150.2
Net Profit	111.1	107.4

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Comment on your results.

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**Business studies (2014 – Unit 1 – Question 7)**

To raise money for the charity Children in Need, a group of business students at Landau Forte College in Derby, bought and resold Krispy Kreme doughnuts. Cost of sales was £80, average selling price was £1.20, fixed costs were £20 and 200 doughnuts were sold. What was the **total contribution** from the sales of the doughnuts?

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**Business studies (2014 – Unit 2 – Question 3)**

In 2012, the Royal Mail announced a 30% price increase for First Class stamps to 60p.

If the **price elasticity of demand** is -2, how much will the demand be?

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**Business studies (2014 – Unit 4 – Question 5)**

**Evidence B**  
**Greggs PLC – selected Financial information adapted from:**  
**Preliminary results for the 52 weeks ended December 2011**

	<b>2011</b>		<b>2010</b>
	<b>(£'000)</b>		<b>(£'000)</b>
<b>Revenue</b>	701 088		662 326
<b>Gross Profit</b>	428 310		409 675
<b>Net Profit</b>	60 500		52 523
<b>Current Assets</b>	55 447		57 982
(of which stock)	14 274		11 883
<b>Current Liabilities</b>	80 893		77 546
<b>Capital Employed</b>	198 383		176 227
<b>Long-term Liabilities</b>	29 724		30 792

Using Evidence B, calculate Greggs **Return on Capital Employed (ROCE)** for 2010 and 2011.

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Assuming the typical **ROCE** of Greggs competitors is 10%, comment on the results of your calculations.

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**Business studies (2013 – Unit 1 – Question 1)**

Lannon’s Limos Ltd, a car hire company based in Peterborough, generated the following financial accounts in December 2012.

	<b>£s</b>
Total revenue	1 250 000
Cost of sales	600 000
Fixed costs	350 000
Contribution	650 000

Calculate the **operating profit** for Lannon's Limos Ltd, and explain your answer.

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**Business studies (2013 – Unit 1 – Question 8)**

Rebecca Webb is a director of Bubble Ltd, a marketing business based in Barnsley. Bubble Ltd has recently experienced a growth in sales volume. Which **one** of the following is **least likely** to determine sales volume?

- (a) number of clients, (b) consumer loyalty, (c) profits, (d) production rates

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**Business studies (2013 – Unit 2 – Question 4)**

Chris Binks' hobby of painting model soldiers has provided him with a business opportunity to sell them. In his business plan he prepared the following **cash flow forecast**.

£	January	February	March
<b>Cash Inflows:</b>			
Sales	3 000	5 000	6 000
<b>Cash Outflows:</b>			
Production Materials	600	1 000	1 200
Wages	1 500	1 750	1 750
Overheads	900	900	800
<b>Total</b>	<b>3 000</b>	<b>3 650</b>	<b>X</b>
Net Cash Flow	–	1 350	<b>Y</b>
Opening balance	2 500	2 500	3 850
Closing balance	2 500	3 850	<b>Z</b>



Calculate the missing **Net Cash Flow (Y)** for March, and explain your answer.

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Assume that in March Chris's sales had been 10% higher than forecast and cash outflows were £4000, what would the **closing balance (Z)** be?

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**Business studies (2013 – Unit 4 – Question 5)**

Using Evidence H, calculate SuperGroup's **Acid Test Ratios** for 2010 and 2011.

**Balance Sheet extract**

<b>£m</b>	<b>2011</b>	<b>2010</b>
Stock	52.3	21.1
Debtors	35.7	16.4
Cash	32.2	29.5
<b>Total current assets</b>	<b>120.2</b>	<b>67.0</b>
Borrowings	–	1.4
Creditors	42.7	22.6
<b>Total current liabilities</b>	<b>42.7</b>	<b>24.0</b>

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Assuming the industry average Acid Test Ratio is 1.2, use your results to the previous question to comment on SuperGroup's **liquidity position**.

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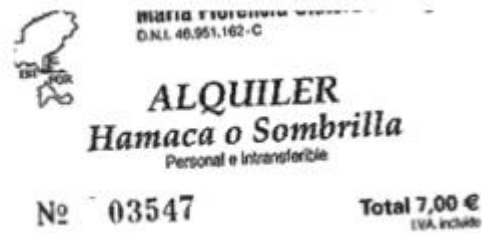
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**Business studies (2012 – Unit 1 – Question 8)**



If, in July 2010, the exchange rate of the £ sterling to the Euro was £1=€1.20, how much would the bus fare and rental of the Hamaca o Sombrilla would have **cost in total** a British tourist in Ibiza. Explain your answer.

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**Business studies (2012 – Unit 2 – Question 5)**

Mary Lewis's business, ID Jewellery, prepares **cash flow forecasts** on a monthly basis.

<b>Receipts</b>	<b>November</b>	<b>December</b>
Sales	£7 500	£11 500
<b>Payments</b>		
Materials	£1 000	£1 400
Wages	£2 500	£3 000
Overheads	£1 000	£1 000
Total payments	£4 500	£5 400
Net cash flow	£3 000	<b>(a)</b>
Opening balance	£1 500	£4 500
Closing balance	£4 500	£10 600

Calculate the missing figure at point (a) in the extract from her forecast? Explain your answer.

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**Business studies (2011 – Unit 1 – Question 1)**

Paul McQuillan is a self-employed electrician based in Barnsley, South Yorkshire. Most of his contracts involve rewiring houses. Paul’s fixed costs are £400 per month, average variable costs per house are £500.

If Paul charges his customers £600 per house, how many contracts per month does Paul need to complete to **break even**? Explain your answer.

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**Business studies (2011 – Unit 2 – Question 4)**

Anne Walker, founder of International Dance Supplies, forecasts monthly cash flows for her business.

<u>Cash Inflow</u>	<b>£ m</b>
Cash sales	1
Payment from debtors	0.5
Total cash inflow	1.5
<u>Cash Outflow</u>	<b>£ m</b>
Labour	0.25
Materials	0.5
Overheads	0.5
Total cash outflow	1.25
<b>Net cash flow</b>	<b>0.25</b>

What will be the new **forecasted net cash flow** for July 2011 if Anne now expects cash sales to be 20% higher and materials to be 20% higher? Explain your answer.

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**Business studies (2011 – Unit 2 – Question 5)**

Sole Trader is a UK footwear retailer. Its budgeted sales for one month were 1 000 units at £50. Its actual sales were 900 units at £52.50. Calculate the **sales variance** and explain your answer.

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**Business studies (2011 – Unit 4 – Question 4)**

In 2008 Morrisons' Capital Employed was £4 378 m, and in 2009 it was £4 520 m. Using this information and Evidence B, calculate the **Return on Capital** Employed for 2008 and 2009. Explain your answer.

**Evidence B**

<b>Summary Income Statement</b>	<b>2009</b>	<b>2008</b>	<b>Change</b>
	<b>£ m</b>	<b>£ m</b>	<b>%</b>
Turnover	14 528	12 969	12
Gross profit	913	818	12
Other operating income	37	30	23
Administrative expenses	(281)	(268)	5
Property transactions	2	32	-
Operating profit	671	612	10
Finance income and cost	(16)	-	-
Taxation	(195)	(58)	236
Profit/(loss) for the period	460	554	(17)

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## Business studies (2011 – Unit 4 – Question 5)

Morrisons' Gearing Ratio was 12% in 2008 and 14% in 2009. Using this, and any additional relevant information, evaluate Morrisons' plans to open more stores in the south of the UK (Evidence A).

### Evidence A

#### Morrisons guns for big rivals in the South after profits jump

Morrisons has outlined its biggest store expansion programme since it acquired Safeway in 2004. These plans were revealed after publishing full-year pre-tax profits up by 7 per cent and credit crunch-defying sales.

The Bradford-based grocer revealed that it plans to open 48 stores within 12 months, including 38 it is acquiring from the Co-operative Group, as it tries to become a nationwide grocer. In addition, Morrisons, the UK's fourth-largest supermarket chain, has identified a further 100 sites, primarily in the south and London, to compete more aggressively with Tesco, Asda and Sainsbury's. 5

Marc Bolland, the chief executive of Morrisons, said: 'Our focus for the next few years is growth in floor space.' 10

The aggressive store expansion programme, along with its investment in IT, will result in a near-doubling of Morrisons' capital expenditure this financial year to more than £1.1 bn. Over the four years to February 2011, Morrisons plans to open 2 million sq ft of additional space. The business will accelerate its store openings through organic growth in 2010–11 by 40 per cent to 500,000 sq ft of space, up from 350,000 sq ft this financial year. 15

For the year to 1 February 2009, Morrisons grew its pre-tax profits by 7 per cent to £655 m. Its like-for-like sales jumped by 7.9 per cent over the 52 weeks, with growth of 7.6 per cent in the first half and an acceleration to 8.1 per cent in the second half, as the worst of the credit crunch surfaced.

Mr Bolland said the company had delivered growth across the UK, but it had been particularly strong in the south of England and Scotland. Total sales rose by 12 per cent to £14.5 bn. 20

Morrisons delivered sales growth across its product range, but the star performer was value range sales, which rocketed by 50 per cent. The sales growth of its premium lines, 'The Best', slowed to 5 per cent, but Mr Bolland said this was ahead of its rivals. 25

He added that it was grabbing market share from its big three rivals, as well as from the more upmarket grocers Waitrose and Marks & Spencer. 'We are the only one of the big four retailers not losing share to the discounters,' Mr Bolland said.

Morrisons has again resisted pressure to move heavily into non-food or to launch an online grocery offer, but the grocer will launch 500 new non-food homeware lines, which will complement its food range, this year. 30

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**Business studies (2010 – Unit 1 – Question 4)**

In April 2008, profits from the sales of Tom Tom’s Satellite Navigation Systems fell from €57m to just €9m, compared to the same quarter of 2007.

During this period Tom Tom did manage to sell an impressive two million units, but their average price fell to €117, and sales revenue fell from €296m to €234m.

How did this affect Tom Tom's profit? Give your answer in **growth rate** and explain.

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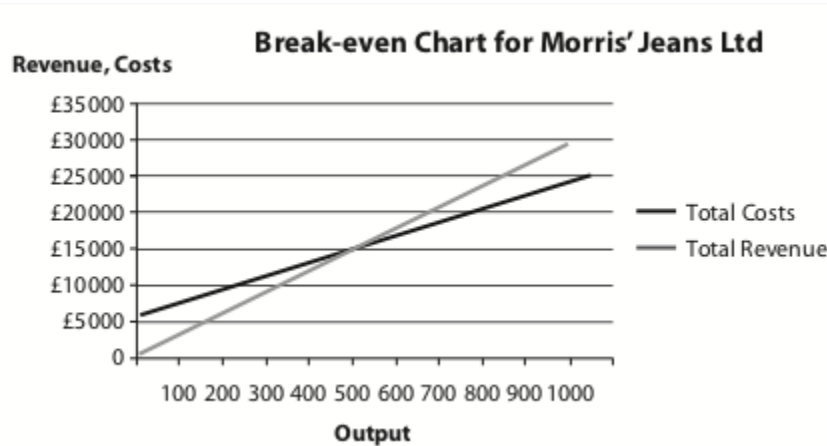
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**Business studies (2010 – Unit 1 – Question 8)**

Owners of new businesses always attempt to operate at a level of output that gives a positive margin of safety.

For the business below, what is the **margin of safety** when output is 900 units? Explain your answer.



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**Business studies (2010 – Unit 4 – Question 2)**

What is meant by **current ratio**? Using Evidence F, calculate the current ratio for 2006 and 2007.

**Evidence F**

**Extract from the Brompton Bicycle Limited accounts**

<b>Profit &amp; Loss Account</b>	<b>£000s</b>	<b>£000s</b>
	<b>31/03/2007</b>	<b>31/03/2006</b>
Sales	5 278	4 894
Cost of Sales	3 251	3 108
Gross Profit	2 027	1 786
Administrative expenses	1 279	1 247
Operating Profit	748	539
Add Interest Received	47	28
Profit before Tax	795	567
Taxation	243	148
Profit After Tax	552	419
<b>Balance Sheet</b>	<b>£000s</b>	<b>£000s</b>
	<b>31/03/2007</b>	<b>31/03/2006</b>
Fixed Assets	129	160
Current Assets		
Stock	1 228	1 095
Debtors & Prepayments	489	429
Cash on deposit and at Bank	1 537	1 182
Total	3 254	2 706
Creditors	661	585
Net Current Assets	<u>2 593</u>	<u>2 121</u>
Net Assets	<u>2 722</u>	<u>2 281</u>
Capital & Reserves		
Share Capital	49	49
Share Premium Account	104	104
Capital Reserve	14	14
Profit & Loss Account	<u>2 555</u>	<u>2 114</u>
	<u>2 722</u>	<u>2 281</u>

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