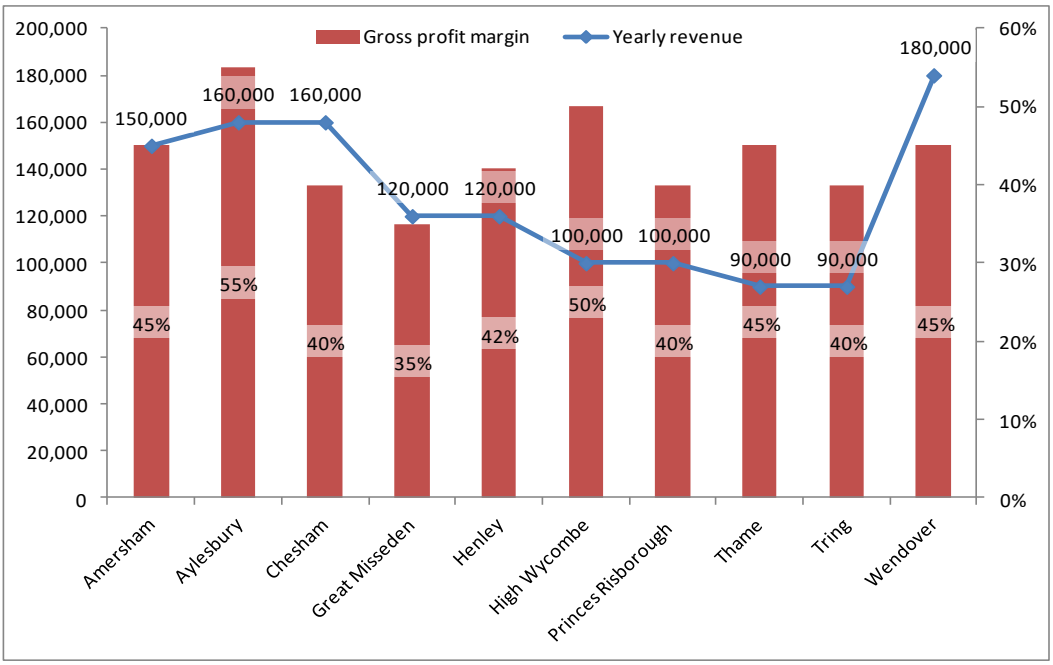
Topic: Summary Practice - Answers

Q1

Male Grooming Salons Ltd (MGS) is a chain of male barber shops, primarily based across Buckinghamshire and Hertfordshire. Figure 1 shows the yearly revenue and gross profit margin per branch.

Figure 1



In addition, the following information is available to you:

- The group has incurred operating expenses of £210,000 for the year
- Corporation tax is payable at 20% on all operating profit
- The owner has agreed to take a dividend of 40% of all remaining profit

Activity: Using the format below, construct a statement of comprehensive income for the year period for Male Grooming Salons Ltd

	£s
Revenue	1,270,000
Cost of Sales	710,600
Gross Profit	**559,400**
Other operating expenses	210,000
Operating profit	**349,400**
Tax	69,880
Profit for the year (net profit)	**279,520**
Dividend	111,808
Retained Profit	**167,712**

Q2

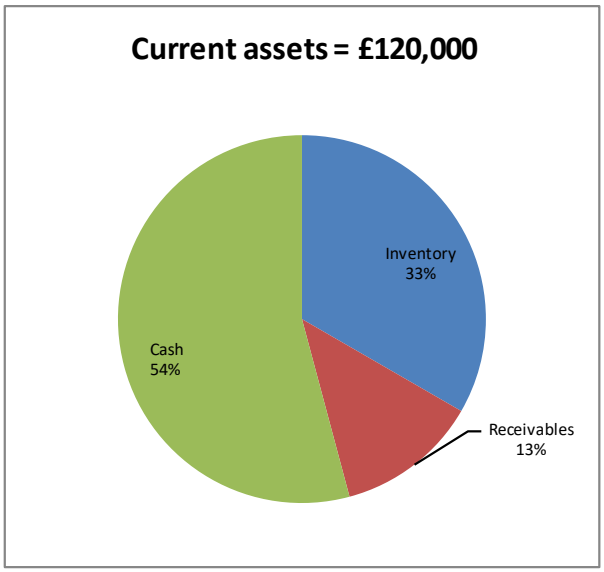
At the same time, MGS's accountant was asked to construct a statement of financial position for the firm. The following information was made available to her:

- Non-current assets (fixed) had been valued at £4.5m
- Current assets are detailed in Figure 3
- At the time, the firm's only current liabilities were trade payables, at a value of £55,000
- All the firm's assets had been funded by a mix of debt and equity shown in Figure 2

Figure 2

Non-current liabilities	2,500,000
Equity	2,065,000
of which:	
Share capital	68%
Reserves	32%

Figure 3



Activity: Using the data above and the template provided, construct a statement of financial position for MGS

Non-current assets	4,500,000
Current assets	
Inventory	40,000
Receivables	15,000
Cash	65,000
Current liabilities	
Payables	55,000
Net current assets	65,000
Non-current liabilities	2,500,000
Net Assets	2,065,000
Share Capital	1,400,000
Reserves	665,000
Total Equity	2,065,000

Q3

The following year, MGS' sales revenue increased to £1.4m with an operating profit margin of 24%. After MGS made improvements to some of its stores its capital structure changed, as shown in Figure 4.

Figure 4 - Capital Structure

Non-current liabilities	£ 2,750,000
Equity	£ 2,232,712

Activity: Using the data provided, calculate MGS's ROCE and gearing

Operating profit = 1.4m x 0.24 = £336,000

Therefore ROCE:

$$\frac{\text{Operating profit}}{\text{Capital employed}} \times 100 \qquad \frac{£\ 336{,}000}{£\ 4{,}982{,}712} \times 100 \qquad \textbf{6.74\%}$$

Gearing:

$$\frac{\text{Non-current liabilities}}{\text{Capital employed}} \times 100 \qquad \frac{£\ 2{,}750{,}000}{£\ 4{,}982{,}712} \times 100 \qquad \textbf{55.19\%}$$

Q4 & 5

After recent successes, MGS has looked at various expansion projects in order to help the firm grow. Its first option was to expand via selling the rights to "Male Grooming Salon" through franchising (option 1). Although cheaper, Managing Director, Kim Barnett, was concerned about the level of risk and the potential of diluting the brand if this choice was made. The other option was to open more branches in a different region of the country (option 2). After some careful research, Kim listed the different options below, with the expected monetary returns for each. MGS had planned to fund option 1 entirely with an additional long term loan and option 2 with 40% from share capital and the remainder from an additional long-term loan.

Figure 5

Option 1 - Cost - £1.2m				
	Success		Failure	
	Return	Chance	Return	Chance
North	£12m	25%	£0.5m	
South	£9m	35%	£0.6m	

Option 2 - Cost - £3.5m				
	Success		Failure	
	Return	Chance	Return	Chance
North	£8m	0.4	£2m	0.6
South	£6.5m	0.65	£4m	?

Activity 1: Using the data provided in Q3 to help, re-calculate MGS's gearing for both options

Activity 2: Construct and calculate a decision tree for the two options detailed in Figure 5. Advise MGS on the best course for expansion based on this decision tree

Option 1 – new capital structure and gearing

Long-term debt	£ 3,950,000
Equity	£ 2,232,712

$$\frac{£\ 3{,}950{,}000}{£\ 6{,}182{,}712} \times 100 = \mathbf{63.89\%}$$

Option 2 – new capital structure and gearing

Long-term debt	£ 4,850,000
Equity	£ 3,632,712

$$\frac{£\ 4{,}850{,}000}{£\ 8{,}482{,}712} \times 100 = \mathbf{57.2\%}$$

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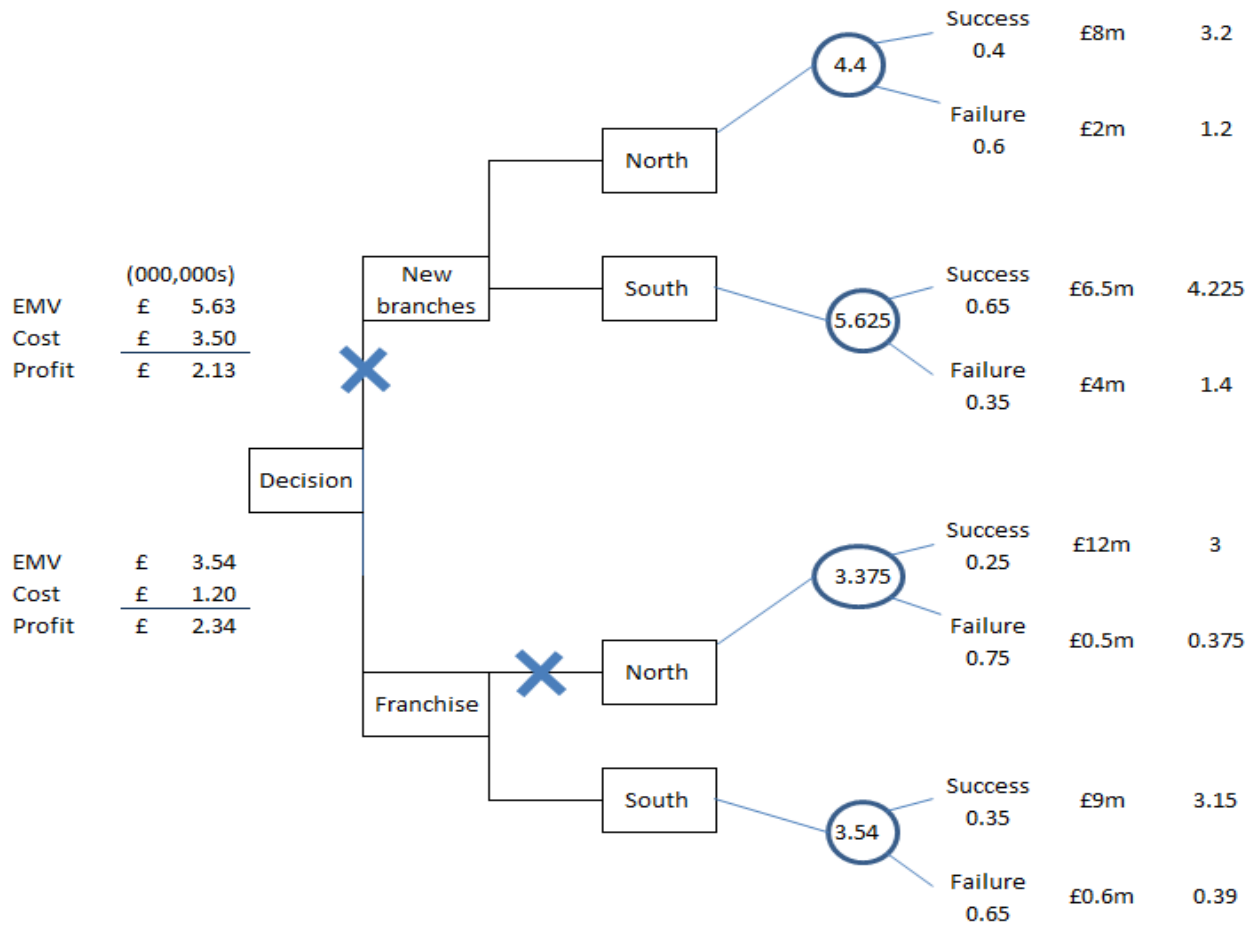


The decision tree suggests the best decision would be to franchise **(option 1)**; selling the rights to franchisees in the **south of the country**, as this option provides £210,000 more profit than the expected returns from opening new branches

Q6 & 7

After careful consideration MGS opted to open more branches, despite the potentially lucrative returns that franchising might have provided. The firm researched two potential locations for these new stores. The potential net cash flows for each location are detailed in Figure 6.

Figure 6 – Net cash flows for both locations

	Berkamsted	Marlow
	£(000s)	£(000s)
0	(350)	(290)
1	56	45
2	64	55
3	78	80
4	95	95
5	110	100

Activity: Using the data provided, calculate the ARR and payback for both locations

Berkamsted:

	Berkamsted	Cumulative
	£(000s)	c/flow
0	-350	-350
1	56	-294
2	64	-230
3	78	-152
4	95	-57
5	110	53

Payback 57 / (110/12)=9.1666 — **4 years and 6.22 months**

ARR 53 / 5 = 10.6

10.6 / 350 x 100 = **3.03%**

Marlow:

	Marlow	Cumulative
	£(000s)	c/flow
0	-290	-290
1	45	-245
2	55	-190
3	80	-110
4	95	-15
5	100	85

Payback 15 / (100/12)=8.3333 — **4 years and 1.80 months**

ARR 85 / 5 = 17

17 / 290 x 100 = **5.86%**

Q8 & 9

Activity: Using the discount factors provided in Figure 7 and the data given in Q6, calculate the NPV for both projects. Briefly advise MGS on the best choice of location, using all the investment appraisal data available *(figures should be calculated to 1 decimal place)*

Figure 7- Discount factors at 4%

1	0.962
2	0.925
3	0.889
4	0.855
5	0.822

Your workings:

Berkamsted:

	Berkamsted £(000s)	Discount factors	NPV
0	(350)	1.000	-350
1	56	0.962	53.8
2	64	0.925	59.2
3	78	0.889	69.3
4	95	0.855	81.2
5	110	0.822	90.4

NPV **£4,000**

Marlow:

	Marlow £(000s)	Discount factors	NPV
0	(290)	1.000	-290
1	45	0.962	43.3
2	55	0.925	50.9
3	80	0.889	71.1
4	95	0.855	81.2
5	100	0.822	82.2

NPV **£38,700**

Final choice:

Using all of the data available, Marlow, is the best location for MGS to choose. It has a quicker payback by 4.42 months, a slightly better ARR (with an average return 2.83% higher than Berkamsted) and Marlow also has a higher NPV, once the time value of money is calculated at a 4% opportunity cost. It should also be noted that Marlow is £60,000 cheaper than Berkamsted.

Q10 & 11

Before opening a new branch to the public, MGS must complete a number of activities which are detailed in Figure 8.

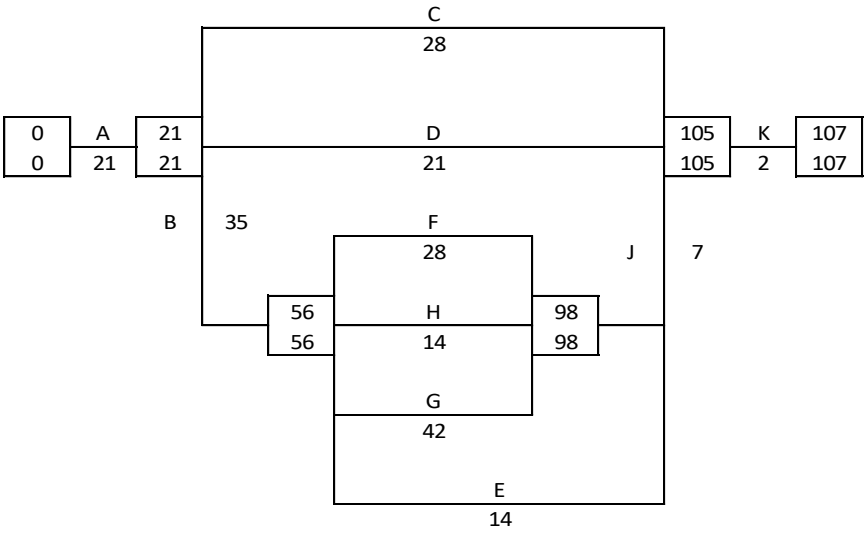
Figure 8 - Activities for opening a new branch

Activity		Time (days)	Dependencies
A	Obtain finance	21	none
B	Complete purchase	35	A
C	Promotion	28	A
D	Recruit staff	21	A
E	Apply for licences	14	B
F	Decorate	28	B
G	Order furniture	42	B
H	Order stock	14	B
J	Install furniture & stock	7	F, G & H
K	Open to public	2	C, D, E & J

Activity 1: Construct a network diagram using the data provided in Figure 8

Activity 2: From this diagram, calculate the following:

- The total project time
- The critical activities
- The total floats for all the non-critical activities



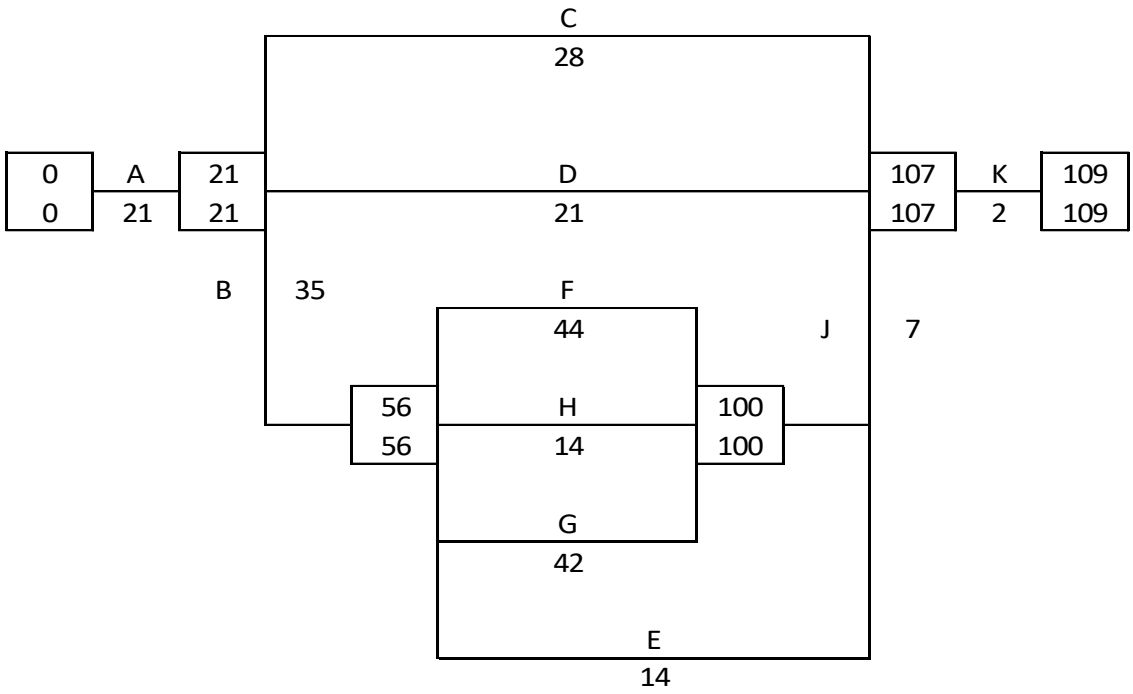
Total project time: 107 days

Critical activities: A, B, G, J, K

Total float for non-critical activities:

Activity	Total float (days)
C	56
D	63
E	35
F	14
H	28

Q12	Due to unforeseen circumstances, activity F (decorating) took an **additional** 16 days from what was originally planned (see Q10 & 11). **Activity:** Calculate the impact this change will have on the total project time, the critical activities and the total floats for the non-critical activities



Total float for non-critical activities:

Activity	Total float (days)
C	58
D	65
E	37
G	2
H	30

Total project time: 109 days

Critical activities: A,B, F, J, K

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Q13	MGS now employs 36 full-time members of staff across all of its branches. Each full-time member of staff works for 320 days a year, each day lasting for 9 hours. On average, it is estimated that the labour productivity per hour, per full-time worker is 3 haircuts. 70% of all haircuts are cut by full-time members of staff. **Activity:** Using the data above, calculate the **total** number of haircuts (full-time and part-time) per year across the MGS group

Total haircuts by full time staff =

Full-time haircuts per hour 36 x 3 = 108

Full-time haircuts per day 108 x 9 = 972

Full-time haircuts per year 972 x 320 = 311,040

70% of all haircuts cut by full-time staff; 30% cut by part-time staff

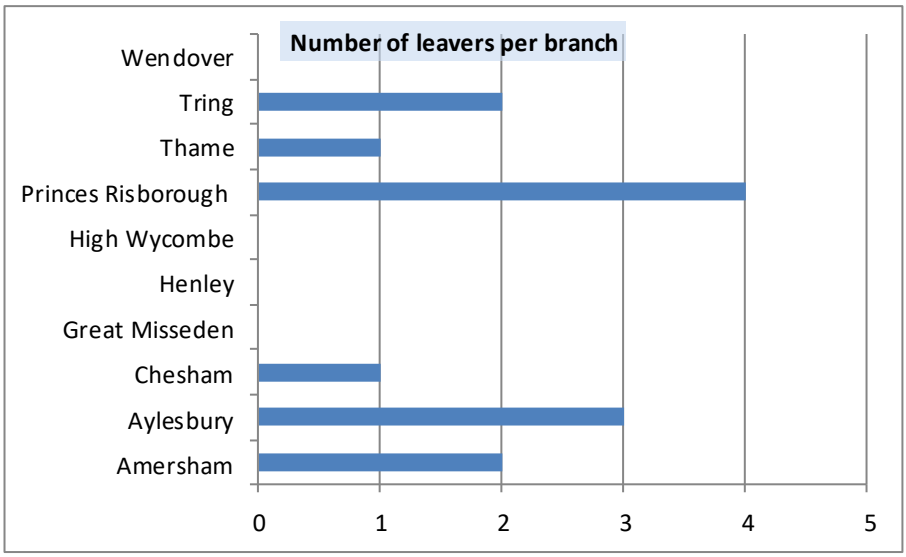
311,040 = 4,443.43 x 30% = 133,303 haircuts performed by part-time staff

70

Total haircuts = 311,040 + 133,303 = 444,343

Q14	In total, MGS employs 62 members of staff across all branches. **Activity:** Using the data in Figure 9, calculate the labour turnover for the whole business over the last year

Figure 9 – Leavers per branch during the last year



Labour turnover $\frac{13}{62}$ x 100 **20.97%**

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Q15 & 16	As MGS has grown, there has become increasing concerns about levels of absenteeism in its branches. This was highlighted when a total of 8 members of staff (across all stores) were absent on the last Saturday before Christmas, leaving many of the business's customers disappointed. **Activity 1:** Using data from Q14, calculate the daily rate of absenteeism for the last Saturday before Christmas **Activity 2:** Calculate the % change in the number of staff that were absent on the second Saturday before Christmas to the last Saturday before Christmas, if the absenteeism rate for the second Saturday was 6.46%

Activity 1: Daily absenteeism rate: $\frac{\text{Number of staff absent on a day}}{\text{Total number of staff employed}} \times 100 = 8/62 \times 100 =$ **12.90%**

Activity 2: 6.46/100 = 0.645 x 62 = 4 members of staff were absent

% change = $\frac{8 - 4}{4} \times 100 =$ **100% increase**