NAME: ……

Foundation/Higher GCSE Mathematics Revision Pack

NUMBER – CALC

Q1. Margaret is in Switzerland.
The local supermarket sells boxes of Reblochon cheese.

Each box of Reblochon cheese costs 3.10 Swiss francs. It weighs 160 g.

In England, a box of Reblochon cheese costs £13.55 per kg.

The exchange rate is £1 = 1.65 Swiss francs.

Work out whether Reblochon cheese is better value for money in Switzerland or in England.

(Total 4 marks)

Q2. Mr and Mrs Jones are planning a holiday to the Majestic Hotel in the Cape Verde Islands.

The table gives information about the prices of holidays to the Majestic Hotel.

MAJESTIC HOTEL, Cape Verde Islands		
Departures	**Price per adult**	
	7 nights	**14 nights**
1 Jan – 8 Jan	£ 694	£ 825
9 Jan – 28 Jan	£ 679	£ 804
29 Jan – 5 Feb	£ 687	£ 815
6 Feb – 18 Feb	£ 769	£ 835
19 Feb – 8 Mar	£ 714	£ 817
9 Mar – 31 Mar	£ 685	£ 805
1 Apr – 9 Apr	£ 788	£ 862
10 Apr – 30 Apr	£ 748	£ 802
Price per child: 95% of adult price for 7 nights or 85% of adult price for 14 nights.		

Mr and Mrs Jones are thinking about going on holiday

on 20 February for 7 nights **or** on 10 April for 14 nights.

Mr and Mrs Jones have 2 children. Compare the costs of these two holidays for the Jones family.

(Total 5 marks)

Q3. Mrs White wants to buy a new washing machine.

Three shops sell the washing machine she wants.

Clean Machines	**Electrics**	**Wash 'n' Go**
		
Washing machine	**Washing machine**	**Washing machine**
Buy now pay later!	$\frac{1}{4}$ off the usual price	£280
£50 deposit plus	of	plus
10 equal payments of £27	£420	VAT at $17\frac{1}{2}\%$

Mrs White wants to buy the cheapest one.
She decides to buy her washing machine from one of these 3 shops.

From which of these shops should she buy her washing machine?
You must show how you decided on your answer.

.....

(Total 6 marks)

Q4. Use your calculator to work out

$$\frac{\sqrt{6700} - 2.38^2}{3.6^2 + 5.71}$$

You must give your answer as a decimal.
Give your answer to three significant figures.

.....

(Total 3 marks)

Q5. Jason earns £50 000 a year. He has to pay income tax.

He is allowed to earn £6500 before paying tax. He pays 20% tax on the next £37 400.

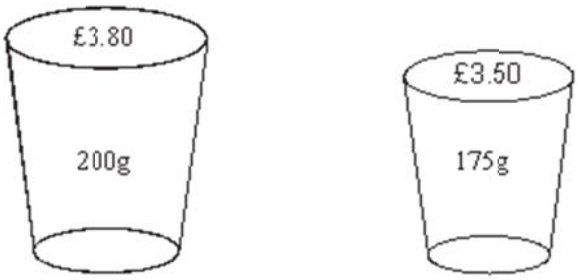
He then pays 40% tax on the rest. His employer deducts the income tax each month.

How much income tax does Jason get deducted each month?

£.....

(Total 5 marks)

Q6.



A Large tub of popcorn costs £3.80 and holds 200g.
A Regular tub of popcorn costs £3.50 and holds 175g.

Which is the better value for money?

.....

(Total 3 marks)

Q7. Work out $\frac{3.4^2 - 2.6^2}{1.6}$.

.....

(Total 2 marks)

Q8. Mary scored 14 out of 20 in a test. Find 14 out of 20 as a percentage.

..... %
(Total 2 marks)

Q9. Alan bought 20 melons for £15.

$\frac{1}{5}$ of the melons were bad so he threw them away.

He sold the remaining melons for £1.50 each. Work out Alan's profit.

£ .....
(Total 4 marks)

Q10. (a) Use your calculator to work out $\frac{26.4 + 8.2}{\sqrt{5.76}}$ as a decimal.

Write down all the figures on your calculator display.

.....
(2)

(b) Write your answer to part (a) correct to 2 decimal places.

.....
(1)
(Total 3 marks)

Q11. (a) Use your calculator to work out the value of $2.58 \times \sqrt{2}$.

Write down all the figures on your calculator display.

.....
(1)

(b) Write your answer to part (a) correct to 1 decimal place.

.....
(1)
(Total 2 marks)

Q12. Esther went to France.

She changed £300 into Euros (€). The exchange rate was £1 = €1.25.

(a) How many Euros did she get?

€ .....
(2)

Esther went shopping in France. She bought:

2 necklaces for €2.60 **each**
1 hat for €6.40
1 bag for €9.80

The exchange rate was £1 = €1.25.

(b) Work out her **total** bill in pounds (£).

£ .....
(4)
(Total 6 marks)

Q13. Use your calculator to work out

$\sqrt{12.63 + 18^2}$

Write down all the figures on your calculator display.

.....
(Total 2 marks)

Q14. Mrs Moger took a group of children to the theatre.

Adult Ticket £13.20

Child Ticket £8.30

The total cost of **one** adult ticket and **all** the child tickets was £146.

Work out the number of children Mrs Moger took to the theatre.

..... children
(Total 3 marks)

Q15. Jenny uses her mother's recipe to make cheese scones.
Her recipe uses a mixture of self-raising flour, butter and cheese in the ratio 6 : 2 : 1 by weight.

In her kitchen, Jenny has:
2 kg of self-raising flour,
500 grams of butter,
200 grams of cheese.

When Jenny makes cheese scones each scone needs about 45 grams of mixture.

Work out the largest number of cheese scones that Jenny can make.

(Total 4 marks)

Q16. Kylie wants to invest £1000 for one year.
She considers two investments, Investment A and Investment B.

Investment A	**Investment B**
£1000	£1000
Earns £2.39 per month	Earns 3.29% interest per annum
plus	Interest paid yearly by cheque.
£4.50 bonus for each complete year	
Interest paid monthly by cheque.	

Kylie wants to get the greatest return on her investment.

Which of these investments should she choose?

(Total 5 marks)

Q17. (a) Express 252 as a product of its prime factors.

.....
(3)

James thinks of two numbers.
He says "The Highest Common Factor (HCF) of my two numbers is 3
The Lowest Common Multiple (LCM) of my two numbers is 45"

(b) Write down two numbers that James could be thinking of.

..... and .....
(3)
(Total 6 marks)

Q18. A shop sells mobile phones.
The table shows the number of mobile phones sold each month from January to May.

Jan	Feb	Mar	Apr	May
70	64	73	85	91

(a) Work out the percentage increase in the number of mobile phones sold from April to May.
Give your answer correct to 3 significant figures.

..... %
(3)

(b) Work out the 3-month moving averages for the information in the table.
The first one has been worked out for you.

.....69..... ....
(2)
(Total 5 marks)

Q19. A garage sells British cars and foreign cars.
The ratio of the number of British cars sold to the number of foreign cars sold is 2 : 7

The garage sells 45 cars in one week.

(a) Work out the number of British cars the garage sold that week.

.....
(2)

A car tyre costs £80 plus VAT at $17\frac{1}{2}$ %.

(b) Work out the total cost of the tyre.

£ .....
(3)

The value of a new car is £12 000
The value of the car depreciates by 20% per year.

(c) Work out the value of the car after 2 years.

£ .....
(3)
(Total 8 marks)

Q20. Express 252 as a product of its prime factors.

.....
(Total 3 marks)

Q21. Use your calculator to work out $\frac{22.4 \times 14.5}{8.5 \times 3.2}$

Write down all the figures on your calculator display.

.....
(Total 2 marks)

Q22. A coin is made from copper and nickel.
84% of its weight is copper.
16% of its weight is nickel.

Find the ratio of the weight of copper to the weight of nickel.
Give your ratio in its simplest form.

.....
(Total 2 marks)

Q23.

Eiffel Tower

The table shows the cost of two different models of the Eiffel Tower.

Small	£2.40
Large	£4.50

Pierre buys 10 Small models, and 5 Large models. He pays with a £50 note.

(a) Work out how much change he should get.

£ .....
(3)

A different model of the Eiffel Tower is made to a scale of 2 millimetres to 1 metre.

The width of the base of the real Eiffel Tower is 125 metres.

(b) Work out the width of the base of the model.
Give your answer in millimetres.

..... mm
(2)

The height of the model is 648 millimetres.

(c) Work out the height of the real Eiffel Tower.
Give your answer in metres.

..... m
(2)
(Total 7 marks)

Q24. Jack invests £3000 for 2 years at 4% per annum compound interest.

Work out the value of the investment at the end of 2 years.

£ .....
(Total 3 marks)

Q25. The cost of a radio is the list price plus VAT at $17\frac{1}{2}\%$.

The list price of a radio is £240. Work out the cost of the radio.

£ .....
(Total 3 marks)

Q26. Use a calculator to work out

$$\sqrt{\frac{21.6 \times 15.8}{3.8}}$$

(a) Write down all the figures on your calculator display.

.....
(2)

(b) Give your answer to part (a) correct to 3 significant figures.

.....
(1)
(Total 3 marks)

Q27. Find the Lowest Common Multiple (LCM) of 24 and 36

.....
(Total 2 marks)

Q28. The weight of a bag of potatoes is 25 kg, correct to the nearest kg.

(a) Write down the smallest possible weight of the bag of potatoes.

..... kg
(1)

(b) Write down the largest possible weight of the bag of potatoes.

..... kg
(1)
(Total 2 marks)

Q29. Here are the ingredients for making cheese pie for 6 people.

Cheese pie for 6 people
180 g flour
240 g cheese
80 g butter
4 eggs
160 ml milk

Bill makes a cheese pie for 3 people.

(a) Work out how much flour he needs.

..... g
(2)

Jenny makes a cheese pie for 15 people.

(b) Work out how much milk she needs.

..... m/
(2)
(Total 4 marks)

Q30. (a) Work out $\frac{4.6 + 3.85}{3.2^2 - 6.51}$

Write down all the numbers on your calculator display.

.....
(2)

(b) Give your answer to part (a) correct to 1 significant figure.

.....
(1)
(Total 3 marks)

Q31. There are some sweets in a bag.

18 of the sweets are toffees. 12 of the sweets are mints.

(a) Write down the ratio of the number of toffees to the number of mints.
Give your ratio in its simplest form.

..... : .....
(2)

There are some oranges and apples in a box. The total number of oranges and apples is 54.
The ratio of the number of oranges to the number of apples is 1 : 5.

(b) Work out the number of apples in the box.

.....
(2)
(Total 4 marks)

Q32. Tania went to Italy.
She changed £325 into euros (€). The exchange rate was £1 = €1.68

(a) Change £325 into euros (€).

€ .....
(2)

When she came home she changed €117 into pounds.

The new exchange rate was £1 = €1.50

(b) Change €117 into pounds.

£ .....
(2)
(Total 4 marks)

Q33. Imran wants to work out how much tax he needs to pay.

Last year he earned £18 000

He does not pay Income tax on the first £6475 he earned.
He pays tax of 20 pence for each pound he earned above £6475 He pays the tax in two equal half-yearly instalments.

(a) How much Income tax does Imran have to pay in his first half-yearly instalment?

.....
(4)

Imran wants to know what percentage of his earnings he pays in tax.

(b) Calculate the Income tax Imran has to pay as a percentage of his earnings last year.

..... %

(2)

(Total 6 marks)

Q34. Peter won £75 as a prize.

He gave $\frac{4}{5}$ of the prize money as a present to Roger and Bethan.

Roger and Bethan shared the present in the ratio 2 : 3

Work out how much they each got.

Roger .....

Bethan .....

(Total 4 marks)

Q35. Use your calculator to work out $\frac{\sqrt{13.2 - 6.8}}{3.25 + 4.9}$

Give your answer as a decimal.
Write down all the figures on your calculator display.

.....

(Total 2 marks)

M1.

Working	Answer	Mark	Additional Guidance
13.55 × 1.65 = 22.3575 3.10 ÷ 160 × 1000 = 19.375 OR 13.55 × 1.65 = 22.3575 22.3575 ÷ 1000 × 160 = 3.5772 OR 3.10 ÷ 1.65 = 1.8787… 1.8787…÷ 160 × 1000 per kg OR 1355 ÷ 1000 = 1.355 p/g 3.10 ÷ 1.65 = 187.87…p 187.87…÷ 160 = 1.1742…p/g OR 3.10 ÷ 160 = 0.019375 SF/g 13.55 × 1.65 ÷ 1000 = 0.0223575 SF/g	Switzerland, with correct explanation	4	**M1** for a correct method to obtain two comparable weights e.g. cost of 1kg in Switzerland, ÷ 160 × 1000, × 6.25 (cost of 1 kg in England given) or cost of 160g in England, ÷ 1000 × 160 (cost of 160g in Switzerland given) or cost per gram in each country, ÷ 160 and ÷ 1000 or cost of 800g in each country **M1** for converting £ to Swiss francs or Swiss francs to £ (other than £1=1.65 SFr) **A1** for two correct values (using same units) for comparison **C1** for Country identified from a clear attempt to use comparable weights and prices. QWC: Decision must be stated, with calculations clearly attributable
			Total for Question: 4 marks

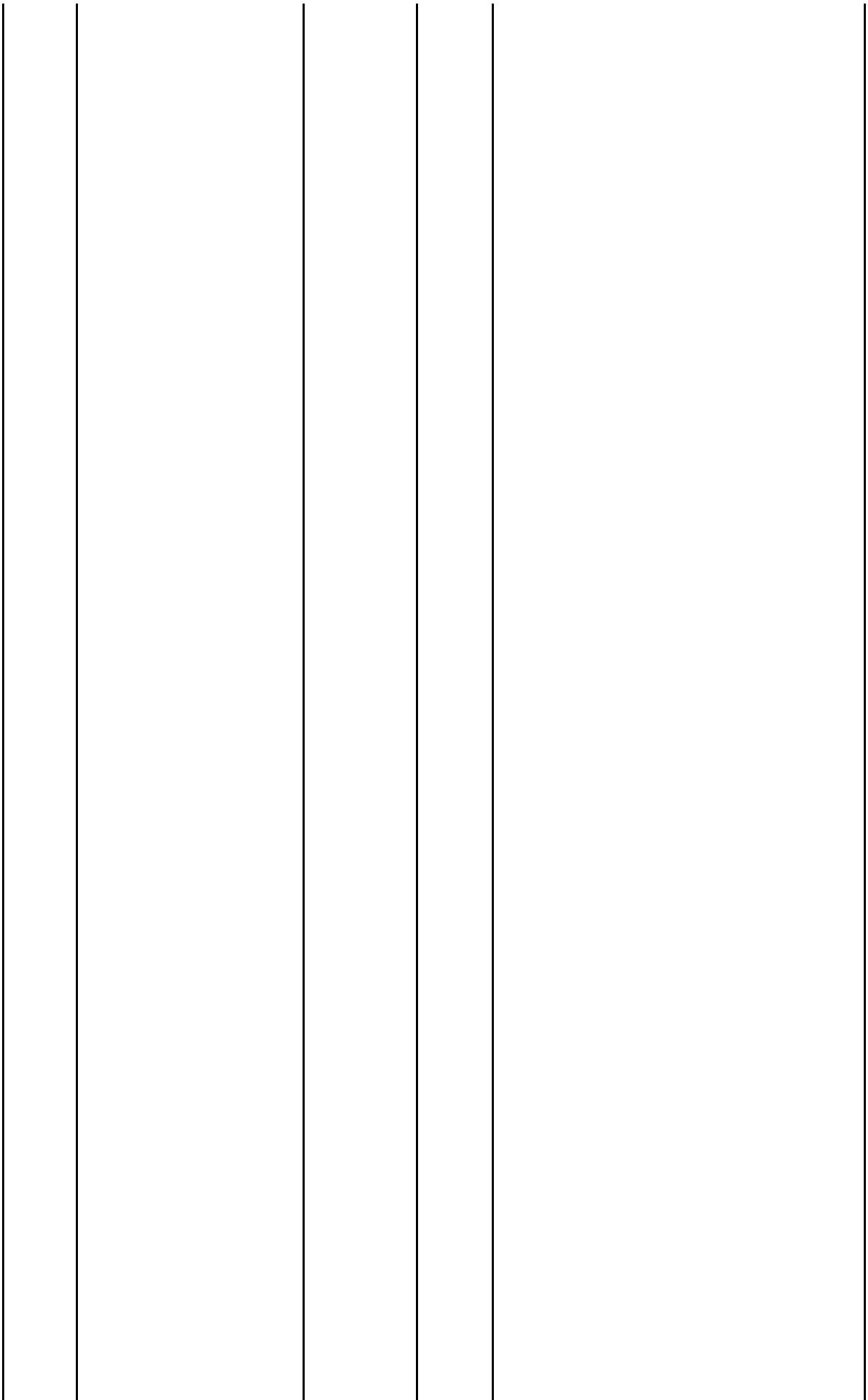
M2.

Working	Answer	Mark	Additional Guidance
714 × 2 = 1428 714 × 0.95 = 678.30 678.30 × 2 = 1356.60 1428 + 1356.60 = 2784.60 802 × 2 = 1604 802 × 0.85 = 681.70 681.70 × 2 = 1363.40 1604 + 1363.40 = 2967.40	Comparison	5	**B1** for identifying 714 and 802 **M1** for $\frac{95}{100}$ x'714' oe or $\frac{85}{100}$ x'802' oe **M1** for 2 × 'adult' + 2 × 'child' oe for at least one holiday **A1** for 2784.6(0) and 2967.4(0) or 2785 and 2967 **C1** for comparing the costs of their two holidays for 2 adults and 2 children and clearly indicating which is cheaper. Conclusion must clearly follow from working. QWC: Decision and justification should be clear with working clearly presented and attributable. (allow full marks for a candidate who has calculated the cost per day for each holiday (397.8(0) and 211.95(7..)) and compares these costs accordingly.)
			Total for Question: 5 marks

M3.

	Working	Answer	Mark	Additional Guidance

QWC (ii, iii) **FE**	280 × 0.175 + 280 (= 329) 420 ÷ 4 (= 315) 50 + 10 × 27 (= 320)	£315, Electrics	6	**M1** for 50 + 10 × 27



	Total for Question: 6 marks

M4.

Working	Answer	Mark	Additional Guidance
	4.08	3	**B1** for 5.6644 or 81.8535(2772...) or 76.1(8912772...) or 18.67 **B1** for 4.08(0831694) **B1** cao
			Total for Question: 3 marks

M5.

Working	Answer	Mark	Additional Guidance
20% of £37 400 = £7480 50 000 – 37 400 – 6500 = £6100 40% of 6100 = £2440 (“7480” + “2440”) ÷ 12	£826.67	5	**M1** for attempt to find 20% of £37 400 **M1** for attempt to find how much is taxed at 40% 50 000 – 37 400 – 6500 **M1** for attempt to find 40% of “6100” **M1** for monthly tax bill is (“7480” + “2440”) ÷ 12 **A1** for £826.67 cao
			Total for Question: 5 marks

M6.

	Working	Answer	Mark	Additional Guidance
FE	380 ÷ 200 = 1.9 350 ÷ 175 = 2	Regular by 0.1p per gram	3	**M1** for 380 ÷ 200 (= 1.9) or 200 ÷ 380 (= 0.526) **M1** for 350 ÷ 175 (= 2) oe or 175 ÷ 350 (= 0.5) oe **C1** for Regular with correct calculations
				Total for Question: 3 marks

M7.

Working	Answer	Mark	Additional Guidance

$3.4^2 - 2.6^2 = 4.8$ $4.8 \div 1.6 =$	3	2	**M1** for $3.4 \times 3.4 - 2.6 \times 2.6$ with evidence of multiplication or 11.56 or 6.76 or 4.8 or 289/25 or 169/25 or 24/5 **A1** for 3 cao (SC **B1** for 7.335 or 1467/200)
			Total for Question: 2 marks

M8.

Working	Answer	Mark	Additional Guidance
$\frac{14}{20} \times 100$	70	2	**M1** for $\frac{14}{20} \times 100$ or $\frac{1400}{20}$ or 14×5 seen or $\frac{70}{100}$ or $\frac{7}{10}$ **OR** for a correct method to turn fraction into percentage **OR** for a correct decomposition, e.g. 10 + 2 + 2 = 50% + 10% + 10% (condone one error) **A1** cao
			Total for Question: 2 marks

M9.

Working	Answer	Mark	Additional Guidance
20 ÷ 5 (= 4) 20 – "4" (= 16) "16" × 1.50 (= 24)	9	4	**M1** for 20 ÷ 5 **M1** for 20 – "4" where 0 < "4" < 20 **M1** for "16" × 1.50 where 0 < "16" < 20 **A1** cao
			Total for Question: 4 marks

M10.

	Working	Answer	Mark	Additional Guidance
(a)	$\frac{26.4 + 8.2}{\sqrt{5.76}} = \frac{34.6}{2.4}$	14.4166(6667)	2	**B2** 14.4166(6667) accept $\frac{173}{12}$ or $14\frac{5}{12}$ or $14.41\dot{6}$ (**B1** for 34.6 or 2.4 seen)
(b)		14.42	1	**B1** ft from "14.4166…" assuming original is to 3 d.p. or more
				Total for Question: 3 marks

M11.

	Working	Answer	Mark	Additional Guidance
(a)	2.58 × √2 =	3.648670991	1	**B1** for 3.648... cao
(b)		3.6	1	**B1** ft for "3.6"
				Total for Question: 2 marks

M12.

	Working	Answer	Mark	Additional Guidance
(a)	300 × 1.25	375	2	**M1** for 300 × 1.25 **A1** cao
(b)	2 × 2.60 + 6.40 + 9.80 (= 21.4) "21.4" ÷ 1.25	£17.12	4	**M2** for 2 × 2.60 + 6.40 + 9.80 (= 21.4) (**M1** for 2.60 + 6.40 + 9.80 (= 18.8)) **M1** for "total" ÷ 1.25 **A1** cao **OR** **M1** for any value ÷ 1.25 (implied by at least one figure below) **M2** for "4.16" + "5.12" + "7.84" (**M1** for "2.08" + "5.12" + "7.84" (= 15.04)) **A1** cao SC: **B1** for 18.8 , **B2** for 15.04
				Total for Question: 6 marks

M13.

Working	Answer	Mark	Additional Guidance
= $\sqrt{336.63}$	18.347….	2	**B2** for 18.347(47939) or $\frac{7\sqrt{687}}{10}$ (**B1** for 18.3… or 336.63 seen)
			Total for Question: 2 marks

M14.

Working	Answer	Mark	Additional Guidance
146 – 13.20 = 132.80 132.80 ÷ 8.30	16	3	**M1** for first step in a valid method eg 146 – 13.20 or sight of 132.8(0) **M1** for "132.80" ÷ 8.3 **A1** cao **Alternative 1 (repeated addition)** **M1** for repeated addition of 8.30 (at least twice) **M1** for 13.20 + repeated addition of 8.30 (at least 15 times) **A1** cao **Alternative 2 (repeated subtraction)** **M1** for repeated subtraction of 8.30 (at least twice) **M1** for repeated subtraction of 8.30 (at least 15 times with answers shown)
			Total for Question: 3 marks

M15.

	Working	Answer	Mark	Additional Guidance
FE	Scone 30g:10g:5g 200 ÷ 5 = 40 500 ÷ 10 = 50 2000 ÷ 30 = 66.7	40	4	**M1** for 45÷(6+2+1) **A1** for SRF = 30, B = 10, C = 5 **M1** for 200÷5 or 500÷10 or 2000÷30 **A1** cao **OR** **M1** for 6×200 or 2×200 or 1×200 or 6×500 or 2×500 or 1×500 or 6×2000 or 2×2000 or 1×2000 **A1** for SRF, B, C = 1200, 400, 200 or 1500, 500, 250 or 2000, 666.7, 33.3 **M1** for (1200 + 400 + 200)/45 **A1** cao.
				Total for Question: 4 marks

M16.

	Working	Answer	Mark	Additional Guidance
QWC	2.39 × 12 + 4.5	33.18	5	**M1** for '2.39 × 12' + 4.5 or diagram showing 2.39, 4.78, 7.17, …, 28.68 oe (condone one error)
FE	3.29/100 × 1000	32.90		**A1** cao **M1** for 3.29/100 × 1000 oe **A1** cao **C1** for Investment A identified **QWC: Decision must be stated, with calculations clearly attributable**
				Total for Question: 5 marks

M17.

	Working	Answer	Mark	Additional Guidance
(a)	2)252 2)126 3) 63 or factor trees 3) 21 7) 7 1	2 × 2 × 3 × 3 × 7	3	**M1** for attempt at continual prime factorisation (at least 2 correct steps); could be shown as a factor tree **OR** sight of at least one each of 2, 3, 7 as factors of 252 **A1** for a fully correct factor tree or 2, 2, 3, 3, 7 which may include 1, but no other numbers **A1** 2 × 2 × 3 × 3 × 7 or $2^2 \times 3^2 \times 7$ oe
(b)	HCF: The numbers must be $3n$ and $3m$ where n and m are coprime and at most one is a multiple of 3 LCM: Factors of 45 are 1, 3, 5, 9, 15, 45	9 and 15 or 3, 45	3	**B3** cao (**B2** for 2 numbers with HCF of 9 or LCM of 15) (**B1** for any attempt to list any 4 factors of 45 or any 4 multiples of 3).
				Total for Question: 6 marks

M18.

	Working	Answer	Mark	Additional Guidance
(a)	$\frac{91-85}{85} \times 100 = \frac{6}{85} \times 100 =$ 7.05882..	7.06%	3	**M2** $\frac{91-85}{85}$ × 100 (**M1** $\frac{91-85}{85}$ or sight of $\frac{6}{85}$ or 0.0705 – 0.071 or or 1.0705 – 1.071) **A1** 7.05 – 7.06 Or **M1** $\frac{91}{85}$ × 100 (= 107.05) **M1** (dep) "107.05" – 100 **A1** 7.05-7.06 T&I methods must lead to an answer 7.05 – 7.06 for full marks, otherwise 0 marks
(b)	(64 + 73 + 85)/3 = 222/3 = 74 (73 + 85 + 91)/3 = 249/3 = 83	74, 83	2	**M1** for (64 + 73 + 85)/3 or (73 + 85 + 91)/3 or 222/3 or 249/3 or 74 or 83 (condone missing brackets) **A1** both answers in the correct order cao
				Total for Question: 5 marks

M19.

	Working	Answer	Mark	Additional Guidance
(a)	45 × 2 ÷ 9	10	2	**M1** for 45 ÷ "2 + 7" or 45 × 2 or 5 seen, or 90 seen or 10 seen as part of a ratio e.g 10:35 **A1** cao
(b)	(80 × 17.5/100) + 80 = 14 + 80 =	£94	3	**M2** for 80 × $\frac{117.5}{100}$ or 80 × 1.175 oe **A1** cao or **M1** for 80 × 0.175 or 80 × $\frac{17.5}{100}$ oe or 14 seen or 8 + 4 + 2 seen **M1**(dep) '14' + 80 or 80 + 80 × $\frac{17.5}{100}$ oe **A1** cao

(c)	12000×0.8^2 **OR** 1st yr: 12000 × 0.2 = 2400; 12000 – 2400 = 9600 2nd yr: 9600 × 0.2 = 1920; 9600 – 1920 = 7680 [3rd year is £6144; 4th yr is £4915.20]	£7680	3	**M2** for 12000×0.8^2 or 12000×0.8^3 **A1** cao **OR** **M1** 12000 × 0.8 oe or 9600 or 2400 or 4800 or 7200 seen **M1**(dep) '9600' × 0.8 oe **A1** cao (if correct answer seen, ignore extra years)
				Total for Question: 8 marks

M20.

Working	Answer	Mark	Additional Guidance
2)252 2)126 3) 63 or factor trees 3) 21 7) 7 1	2 × 2 × 3 × 3 × 7	3	**M1** for attempt at continual prime factorisation (at least 2 correct steps); or two stages of a factor tree with the first step completely correct and the following step at least partially correct, **OR** sight of at least one each of 2, 3, 7 as factors of 252. **A1** Fully correct factor tree of a list of 2, 2, 3, 3, 7 which may include 1 but no other numbers. **A1** $2 \times 2 \times 3 \times 3 \times 7$ or $2^2 \times 3^2 \times 7$ oe
			Total for Question: 3 marks

M21.

Working	Answer	Mark	Additional Guidance
$\frac{22.4 \times 14.5}{8.5 \times 3.2} = \frac{324.8}{27.2}$	11.94117647	2	**M1** for 324.8 or 27.2 oe eg $\frac{1624}{5}, \frac{136}{5}$ **A1** 11.941(17647…) Accept $\frac{203}{17}, 11\frac{16}{17}$
			Total for Question: 2 marks

M22.

Working	Answer	Mark	Additional Guidance
84:16 or 42:8	21:4	2	**M1** 84:16 or 42:8 or 4:21 or 5.25:1 or 1:0.19…, or any multiple of 84:16 (eg 8.4:1.6, 21:4, 10.5:2), or for answers given the wrong way around. For **M1** ignore % signs. **A1** cao
			Total for Question: 2 marks

M23.

	Working	Answer	Mark	Additional Guidance
(a)	(2.40 × 10) + (4.50 × 5) = 24.00 + 22.50 = 46.50 50.00 – 46.50	3.50	3	**M1** (2.40 × 10) or (4.50 × 5) or sight of 24 or 22.5(0) **M1** (2.40 × 10) + (4.50 × 5) or sight of 24 + 22.5(0) or sight of 46.5(0) **A1** cao Accept 3.5
(b)	125 × 2	250	2	**M1** 125 × 2 **A1** cao
(c)	648 ÷ 2	324	2	**M1** 648 ÷ 2 **A1** cao
				Total for Question: 7 marks

M24.

Working	Answer	Mark	Additional Guidance
$3000 \times \frac{4}{100} + 3000 = 3120$ $3120 \times \frac{4}{100} + 3120 = 3244.80$ **or** $3000 \times \left(\frac{104}{100}\right)^2$	3244.80	3	**M1** for $3000 \times \frac{4}{100}$ **or** 120 **or** 240 **or** 3240 **or** 3120 **or** 1.04 × 3000 **or** 2880 **or** 2760 **M1**(dep) for (3000+'120') $\times \frac{4}{100}$ **or** 124.8(0) **or** "3120"×1.04 **A1** £3244.8(0) **OR** **M2** $3000 \times \left(\frac{104}{100}\right)^2$ **or** $3000 \times \left(\frac{104}{100}\right)^3$ **A1** £3244.8(0) NB : If correct answer seen then ignore subsequent years
			Total for Question: 3 marks

M25.

Working	Answer	Mark	Additional Guidance
$240 \times \frac{117.5}{100}$ **or** 240 + 24 + 12 + 6	£282	3	**B1** for 117.5 or 1.175 **M1** for $240 \times \frac{117.5}{100}$ oe **A1** cao **OR** **M1** for $240 \times \frac{17.5}{100}$ **OR** 24 + 12 + 6 oe **OR** 42 **M1**(dep) for 240 + "42" **OR** 240 + 24 + 12 + 6 **A1** cao
			Total for Question: 3 marks

M26.

	Working	Answer	Mark	Additional Guidance
(a)	$\sqrt{\frac{21.6 \times 15.8}{3.8}}$ =	9.476841579	2	**M1** for 89.81052 …. or 341.28 or 4.86151… or $\frac{8532}{95}$ or $\frac{8532}{25}$ **A1** for 9.47684..... SC: **B1** for 9.476841579… truncated or rounded to at least 1 decimal place
(b)	$\sqrt{89.81052632}$	9.48	1	**B1** ft from (a) with at least 4 significant figures
				Total for Question: 6 marks

M27.

Working	Answer	Mark	Additional Guidance
24 48 72 36 72	72	2	**M1** for listing at least 1 multiple of 24 AND 1 multiple of 36 **A1** cao **OR** **M1** for 2, 2, 2, 3 (prime factors of 24) **OR** 2, 2, 3, 3 (prime factors of 36) (may be seen in factor tree or in repeated division) **A1** cao
			Total for Question: 2 marks

M28.

	Answer	Mark	Additional Guidance
(a)	24.5	1	**B1** cao
(b)	25.5	1	**B1** for 25.5 or $25.4\dot{9}$
			Total for Question: 2 marks

M29.

	Working	Answer	Mark	Additional Guidance
(a)	180 ÷ 2	90	2	**M1** for 180 ÷ 2 **OR** 180 ÷ 6 × 3 **A1** cao
(b)	160 × 2.5	400	2	**M1** for 160 × 2.5 **OR** 160 ÷ 6 × 15 **OR** 160 ÷ 2 × 5 oe **A1** cao SC: **B1** for an answer of 399 to 405
				Total for Question: 4 marks

M30.

	Working	Answer	Mark	Additional Guidance
(a)	4.6 + 3.85 = 8.45 3.2^2 – 6.51 = 3.73 8.45 ÷ 3.73 =	2.26541555	2	**M1** for $\frac{169}{20}$ or $\frac{256}{25}$ or $\frac{373}{100}$ or 3.73 or 10.24 or 8.45 seen **A1** for 2.265(41555); accept $\frac{845}{373}$
(b)		2	1	**B1** ft for 2 or follow through their answer to part (a) NB: 2.0 gets **B0**
				Total for Question: 3 marks

M31.

	Working	Answer	Mark	Additional Guidance
(a)	18 ÷ 6:12 ÷ 6	3 : 2	2	**M1** for 18 : 12 or 12 : 18 or 1.5:1 or 1:0.67 oe or correct ratio reversed eg 2:3 **A1** for 3 : 2 or 1 : 0.6 … [recurring]
(b)	5 + 1 = 6 54 ÷ 6 = 9 5 × 9	45	2	**M1** for $\frac{5}{5+1}$ × 54 or $\frac{1}{5+1}$ × 54 or 54 ÷ '5 + 1' or 54 × 5 or 270 or 9 : 45 or 9 seen, as long as it is not associated with incorrect working. **A1** for 45 cao
				Total for Question: 4 marks

M32.

	Working	Answer	Mark	Additional Guidance
(a)	325 × 1.68	546	2	**M1** for 325 × 1.68 seen or digits 546 **A1** for 546, accept 546.00, 546.0
(b)	117 ÷ 1.5	78	2	**M1** for 117 ÷ 1.5 seen or digits 78 **A1** for 78, accept 78.00, 78.0
				Total for Question: 4 marks

M33.

	Working	Answer	Mark	Additional Guidance

(a)	18000 – 6475 = 11525 $11525 \times \frac{20}{100} = 2305$	£1152.50	4	**M1** 18000 – 6475 **A1** 11525

(b)	$\frac{'2305'}{18000} \times 100$	12.8	2	

Total for Question: 6 marks

M34.

Working	Answer	Mark	Additional Guidance

$\frac{4}{5} \times 75 = 60$ $60 \div 5 = 12$ $3 \times 12 = 36$ $2 \times 12 = 24$	Roger 24 Bethan 36	4		

	Total for Question: 4 marks

M35.

Working	Answer	Mark	Additional Guidance
$\frac{\sqrt{6.4}}{8.15}$	0.31040762...	2	**M1** correct order of evaluation as evidenced by sight of 6.4 or 8.15 **A1** 0.31040(762….)
			Total for Question: 2 marks