

Foundation/Higher GCSE Mathematics Revision Pack**NUMBER – NON-CALC**

Q1. Work out 35% of 240.

.....

(Total 2 marks)

Q2. Work out $\frac{1}{8} + \frac{3}{4}$.

.....

(Total 2 marks)

Q3. Find 15% of £200.

£

(Total 1 mark)

Q4. Work out 15% of £80

£

(Total 2 marks)

Q5. Work out $\frac{3}{6} \times \frac{1}{4}$.

.....

(Total 2 marks)

Q6. (a) Work out $\frac{1}{3} + \frac{1}{12}$

.....

(2)

(b) Work out $\frac{3}{4} \times \frac{1}{6}$

.....

(1)**(Total 3 marks)**

Q7. Find the Lowest Common Multiple (LCM) of 8 and 12

.....

(Total 2 marks)

Q8. Here are the ingredients needed to make 8 pancakes.

Pancakes

Ingredients to make 8 pancakes

300 ml milk
1 egg
120 g flour
5 g butter

Jacob makes 24 pancakes.

(a) Work out how much milk he needs.

..... ml

(2 marks)

Cathie makes 12 pancakes.

(b) Work out how much flour she needs.

..... g

(2)

(Total 4 marks)

Q9. Work out an estimate for $\frac{302 \times 9.98}{0.61}$

.....

(Total 3 marks)

Q10. $p = 2^4 \times 2^3$

$q = 2^5$

Work out the value of $\frac{p}{q}$

You must show your working.

.....

(Total 2 marks)

Q11. (a) Express 84 as a product of its prime factors.

.....

(2)

Sally is a patient in a hospital.
She has to take a red pill every 4 hours, a blue pill every 6 hours and a white pill every 8 hours.
She takes a pill of each colour at midday.

(b) When will she next take a pill of each colour at the same time?

.....

(2)

(Total 4 marks)

Q12. Anwar, Bethany and Colin each earn the same weekly wage.

Each week, Anwar saves 12% of his wage and spends the rest.

Each week, Bethany spends $\frac{7}{8}$ of her wage and saves the rest.

The ratio of the money Colin saves each week to what he spends is 1 : 9

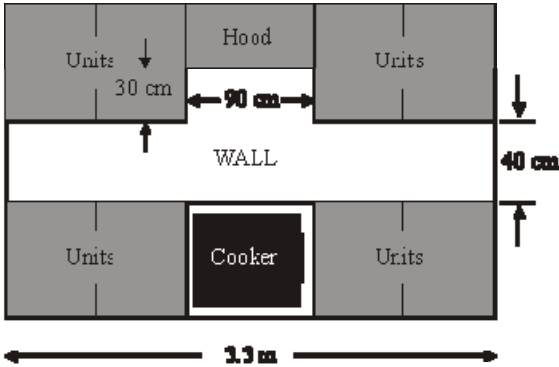
Which of Anwar, Bethany and Colin, saves the most money each week?
 You must show each stage of your working.

.....

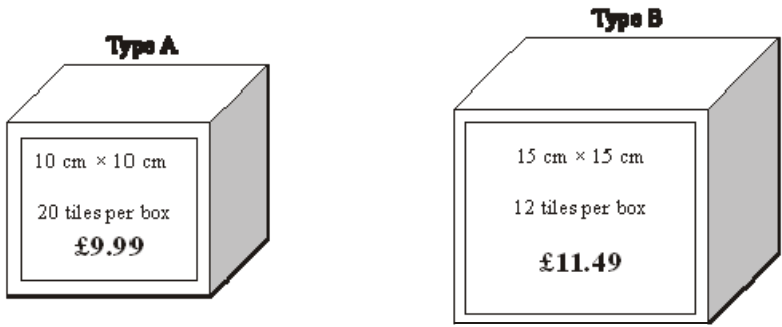
(Total 4 marks)

Q13. The diagram shows a wall in Jenny's kitchen

Diagram
NOT
 accurately
 drawn



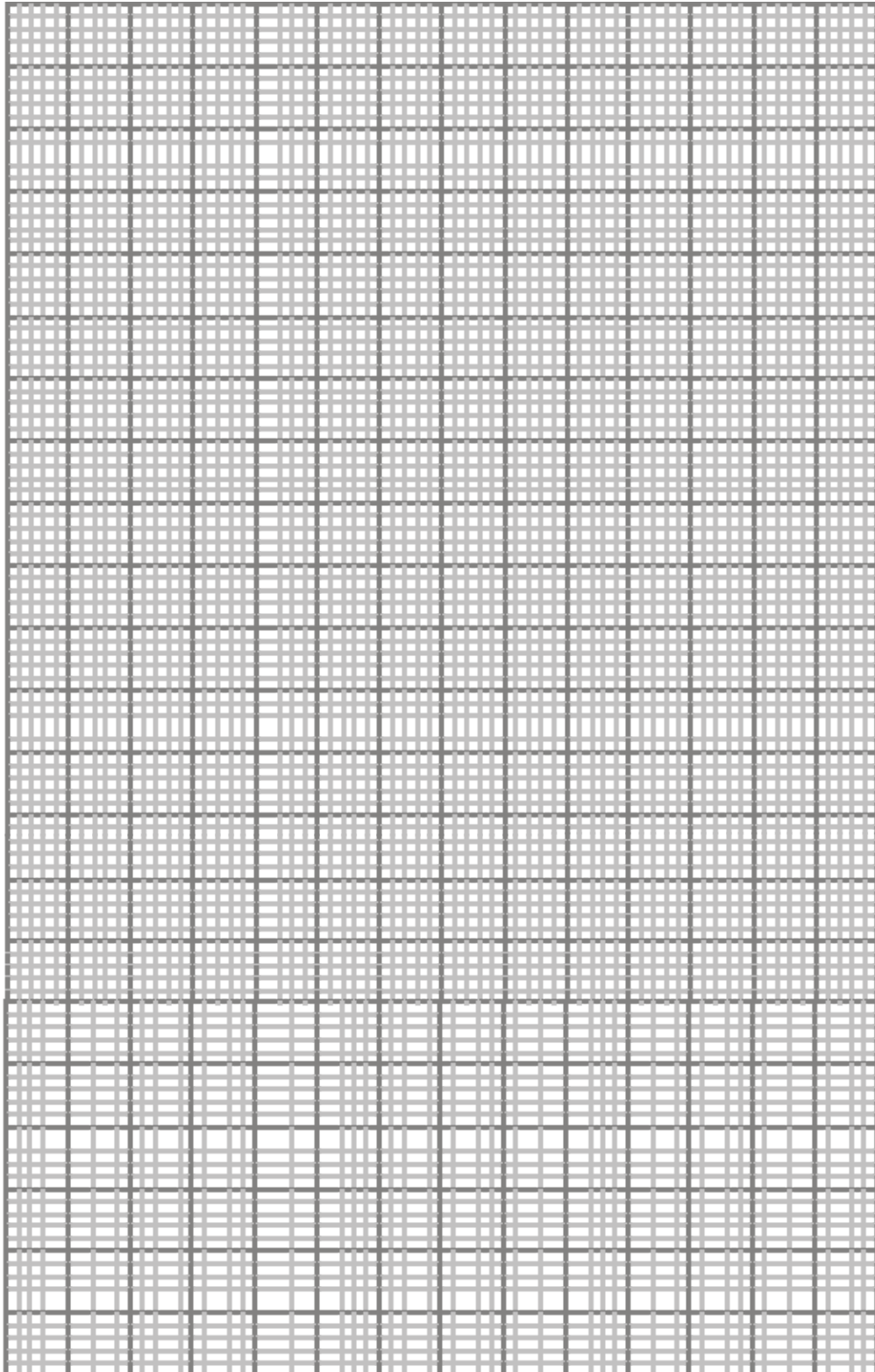
Jenny wishes to tile this wall in her kitchen.
 She chooses between the two types of tile shown below.



- (a) Which tiles should Jenny use to spend the least amount of money on tiling the wall?
- You must show all of your working.

A Box of Type A tiles has dimensions 10.5 cm × 10.5 cm × 21 cm.
 Readypac wants to produce cartons which hold 12 boxes of Type A tiles, when full.

- (b) On the grid below, design a net of a carton that Readypac could use.



(3)

(Total 9 marks)

Q14. (a) Write down the reciprocal of 4

.....

(1)

(b) Work out the value of $2\frac{4}{5} - 1\frac{3}{4}$

Give your answer as a fraction in its simplest form.

.....

(c) Sundas says that $4\frac{1}{3}$ is equal to 4.3

Sundas is **wrong**.
Explain why.

.....

(1)

(Total 5 marks)

Q15. The table shows the membership and annual fees of a local golf club.

| | Full members | Weekday members | Lady members | Junior members |
|-------------------|--------------|-----------------|--------------|----------------|
| Number of members | 243 | 64 | 77 | 36 |
| Annual Fee | £600 | £300 | £250 | £120 |

The club needs to raise £7200 to refurbish the clubhouse next year.

In the committee meeting, the club Captain suggests that the fee for each full member next year should be increased by 5%.
The club President says that next year each member should pay an extra £18

Which is the better suggestion?
You must show all your working.



(Total 5 marks)

Q16. Ali, Ben and Candice share £300 in the ratio 2 : 3 : 5.

How much money does Candice get?

£

(Total 2 marks)

Q17. Veena bought some food for a barbecue.
She is going to make some hot dogs.
She needs a bread roll and a sausage for each hot dog.

There are 40 bread rolls in a pack.
There are 24 sausages in a pack.

Veena bought exactly the same number of bread rolls and sausages.

(i) How many packs of bread rolls and packs of sausages did she buy?

..... packs of bread rolls

..... packs of sausages

(ii) How many hot dogs can she make?

..... hot dogs

(Total 5 marks)

Q18. Last year, Jora spent
30% of his salary on rent

$\frac{2}{5}$ of his salary on entertainment

$\frac{1}{4}$ of his salary on living expenses.

He saved the rest of his salary.

Jora spent £3600 on living expenses.

Work out how much money he saved.

£

(Total 5 marks)

Q19. Here is a list of ingredients for making 8 cheese scones.

| Ingredients for 8 cheese scones |
|---------------------------------|
|---------------------------------|

| |
|--------------------------|
| 200 g self-raising flour |
|--------------------------|

| |
|-------------|
| 60 g butter |
|-------------|

| |
|-------------|
| 30 g cheese |
|-------------|

| |
|-------------|
| 150 ml milk |
|-------------|

Work out the amount of each ingredient needed to make 12 cheese scones.

..... g self-raising flour

..... g butter

..... g cheese

..... ml milk

(Total 3 marks)

Q20. Given that $32 \times 14 = 448$

write down the value of

(a) 32×1.4

.....

(b) 0.32×14

.....

(1)

c) $448 \div 320$

.....

(1)

(Total 3 marks)

Q21. Work out an estimate for $\frac{10.1 \times 20.7}{6.9 - 3.1}$

.....

(Total 3 marks)

Q22. Find the Lowest Common Multiple (LCM) of 20 and 36.

.....

(Total 2 marks)

Q23. (a) Change $6\frac{5}{8}$ to a decimal.

.....

(2)

(b) Work out $2\frac{1}{6} + \frac{1}{7}$

.....

(2)

(c) Work out $2\frac{1}{2} \times 1\frac{3}{6}$

.....

(3)

(Total 7 marks)

Q24. Using the information that

$$4.8 \times 34 = 163.2$$

write down the value of

(a) 48×34

..... (1)

(b) $4.8 \times 3.$

..... (1)

(c) $163.2 \div 48$

..... (1)

(Total 3 marks)

Q25. David buys some stamps.
Each stamp costs 25p.
The total cost of the stamps is £3

(a) Work out the number of stamps David buys.

..... (2)

Adam, Barry and Charlie each buy some stamps.
Adam buys x stamps.
Barry buys three times as many stamps as Adam.

(b) Write down an expression, in terms of x , for the number of stamps Barry buys.

..... (1)

Charlie buys 5 more stamps than Adam.

(c) Write down an expression, in terms of x , for the number of stamps Charlie buys.

..... (1)

(Total 4 marks)

Q26. Kaysha has a part-time job.
She is paid £5.40 for each hour she works.
Last week Kaysha worked for 24 hours.

Work out Kaysha's total pay for last week.

£ (Total 3 marks)

Q27. (a) Express 84 as a product of its prime factors.

.....

(3)

- (b) Find the Highest Common Factor (HCF) of 84 and 35

.....

(2)

(Total 5 marks)

Q28.

Work out

$$\frac{2}{6} + \frac{1}{7}$$

.....

(Total 2 marks)

Q29.

A tin of cat food costs 40p.

A shop has a special offer on the cat food.

Special offer

Pay for 2 tins and get 1 tin free



Julie wants 12 tins of cat food.

- (a) Work out how much she pays.

£

(3)

The normal price of a cat basket is £20

In a sale, the price of the cat basket is reduced by 15%.

- (b) Work out the sale price of the cat basket.

£

(3)

(Total 6 marks)

Q30.

Sidra and Gemma share £48 in the ratio 5 : 3

Work out how much more money Sidra gets than Gemma gets.

£

(Total 3 marks)

Q31.

A tin of cat food costs 40p.

A shop has a special offer on the cat food.



Julie wants 12 tins of cat food.

- (a) Work out how much she pays.

£ (3)

9 of the 12 tins are tuna.

- (b) Write 9 out of 12 as a percentage.

..... % (2)

The normal price of a cat basket is £20
In a sale, the price of the cat basket is reduced by 15%.

- (c) Work out the sale price of the cat basket.

£ (3)
(Total 8 marks)

- Q32.** Work out an estimate for the value of

$$\frac{0.8 \times 101}{1.061}$$

..... (Total 3 marks)

- Q33.** The length of a line is 63 centimetres, correct to the nearest centimetre.

- (a) Write down the **least** possible length of the line.

..... centimetres (1)

- (b) Write down the **greatest** possible length of the line.

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

- Q34.** $2x^2 = 72$

- (a) Find a value of x .

..... (2)

- (b) Express 72 as a product of its prime factors.

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

Q35. Use the information that

$$322 \times 48 = 15\,456$$

to find the value of

(a) 3.22×4.8

..... (1)

(b) 0.322×0.48

..... (1)

(c) $15\,456 \div 4.8$

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

Q36. There are 600 counters in a bag.

90 of the counters are yellow.

- (a) Work out 90 as a fraction of 600.
Give your answer in its simplest form.

..... (2)

180 of the 600 counters in the bag are red.

- (b) Work out 180 as a percentage of 600.

..... % (2)

The rest of the counters in the bag are blue or green.
There are twice as many blue counters as green counters.

- (c) Work out the number of green counters in the bag.

..... (2)
(Total 6 marks)

Q37. (a) Express 66 as a product of its prime factors.

..... (2)

(b) Express 132^2 as a product of its prime factors.

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

Q38. Last year Sasha was paid £15400 after deductions from her gross salary.
She was paid 70% of her gross salary.
This year Sasha's gross salary increased by 2%.

Work out the increase in Sasha's gross salary. Give your answer in pounds.

£

(Total 4 marks)

Q39. Jennie's council has a target of $\frac{1}{5}$ for households to recycle their waste.

In January, Jennie recycled $\frac{1}{10}$ of her household waste.

In February, she recycled 15 kg of her 120 kg of household waste.

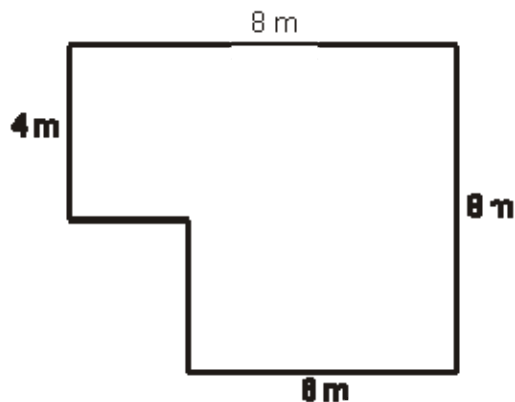
Her result for March was 13% recycled out of 112 kg of household waste.

Has Jennie met the council's target?
Which was her best month for recycling?
Show clearly how you got your answers.

(Total 4 marks)

Q40.

Diagram **NOT**
accurately drawn



The diagram is a plan of the floor of Nikola's room.
 All the angles are right angles.
 Nikola is going to lay flooring to cover all the floor.

She can choose either carpet tiles or wood strips.

Carpet tiles come in packs of 32 and are square. They measure 50 cm by 50 cm.
 Wood strips come in packs of 10 and are rectangular. They measure 2 m by 25 cm.

She only wants to use one type of flooring and buy as few packs as she can.
 Which type of flooring should she choose?

.....

(Total 6 marks)

M1.

| Working | Answer | Mark | Additional Guidance |
|-------------------------------|--------|------|--|
| $\frac{36}{100} \times 240 =$ | 84 | 2 | $\frac{36}{100}$ M1 for $\frac{36}{100} \times 240$ or 0.36×240 or 36×2.4 or $24 + 24 + 24 + 12$ or for any complete method. A1 for 84 cao |
| Total for Question: 2 marks | | | |

M2.

| Working | Answer | Mark | Additional Guidance |
|-----------------------------|---------------|------|---|
| $\frac{1}{8} + \frac{8}{8}$ | $\frac{7}{8}$ | | $\frac{8}{8}$ M1 for $\frac{8}{8}$ OR correct attempt to make fractions have a common denominator with at least one fraction correct OR for 0.125 and 0.75 seen $\frac{7}{8}$ A1 for $\frac{7}{8}$ oe or 0.875 |
| Total for Question: 2 marks | | | |

M3.

| Working | Answer | Mark | Additional Guidance |
|--|--------|------|---------------------|
| $\frac{16}{100} \times 200$ or $20 + 10$ | 30 | 1 | B1 cao |

| | | | |
|----------------------------|--|--|--|
| | | | |
| Total for Question: 1 mark | | | |

M4.

| Working | Answer | Mark | Additional Guidance |
|-----------------------------|--------|------|--|
| $80 \div 100 \times 15$ | 12 | 2 | M1 for $80 \div 100 \times 15$ or 8 and 4 seen or correct method to find 10% and 5% of 80 eg $80 \div 100 \times 10$ and $80 \div 100 \times 5$ oe A1 cao |
| Total for Question: 2 marks | | | |

M5.

| Answer | Mark | Additional Guidance |
|-----------------------------|------|---|
| $\frac{3}{20}$ | 2 | M1 for clear attempt to multiply numerators and multiply denominators e.g. $\frac{3 \times 1}{6 \times 4}$ or $\frac{12 \times 6}{20 \times 20}$ A1 for $\frac{3}{20}$ oe |
| Total for Question: 2 marks | | |

M6.

| | Working | Answer | Mark | Additional Guidance |
|-----|---------------------------------|----------------|------|---|
| (a) | $\frac{4}{12} + \frac{1}{12}$ | $\frac{5}{12}$ | 2 | M1 for $\frac{4}{12}$ or for attempting to use a suitable common denominator other than 12, at least one of the two fractions correct. A1 for $\frac{5}{12}$ oe OR Attempt to use decimals, must use at least 2 d.p. M1 for $0.33(33...) + 0.08(33...)$ A1 for 0.416 recurring |
| | | | | |
| (b) | $\frac{3 \times 1}{4 \times 6}$ | $\frac{3}{24}$ | 1 | B1 for $\frac{3}{20}$ oe |

M7.

| | Working | Answer | Mark | Additional Guidance |
|---|--|-------------------------------|------|--|
| QWC (ii, iii) FE | $330 \div 10 = 33$ A tiles per long row $40 \div 10 = 4$ long rows $33 \times 4 = 132$ tiles $90 \div 10 = 9$ tiles per short row $30 \div 10 = 3$ short rows $9 \times 3 = 27$ tiles $132 + 27 = 159$ tiles No of boxes needed $= 8$ ($20 \times 8 = 160$ tiles) $\text{£}9.99 \times 8 = \text{£}79.92$ $330 \div 15 = 22$ B tiles per long row $40 \div 15 = 3$ long rows (1 row of tiles will be cut) $22 \times 3 = 66$ A tiles $90 \div 15 = 6$ tiles per short row $30 \div 15 = 2$ short rows $6 \times 2 = 12$ tiles $66 + 12 = 78$ tiles No of boxes needed $= 7$ ($12 \times 7 = 84$ tiles) $\text{£}11.49 \times 7 = \text{£}80.43$ OR Wall area = $330 \times 40 + 90 \times 30$ $= 13200 + 2700 = 15900 \text{ cm}^2$ Tile A area = $10 \times 10 = 100 \text{ cm}^2$ No of tiles = $15900 \div 100 = 159$ No of boxes needed $= 8$ ($20 \times 8 = 160$ tiles) $\text{£}9.99 \times 8 = \text{£}79.92$ Tile B area = $15 \times 15 = 225 \text{ cm}^2$ No of tiles = $15900 \div 225 = 70$ $(225 \times 70 = 15750) + 1$ No of boxes needed $= 6$ ($12 \times 6 = 72$ tiles) but some tiles will need to be cut, so 7 boxes needed $\text{£}11.49 \times 7 = \text{£}80.43$ | Tile A is the most economical | 6 | M1 for $330 \div 10$ or $90 \div 10$ or $330 \div 15$ or $90 \div 15$ A1 for (33 and 9) or (22 and 6) M1 for $33 \times 4 + 9 \times 3$ or $22 \times 3 + 6 \times 2$ A1 ft for 10 A boxes needed ($'33 \times 4' \div '9 \times 3'$) $\div 20$ rounded up to nearest whole number) or for 7A boxes needed ($'22 \times 3' \div '6 \times 2'$) $\div 12$ rounded up to nearest whole number) B1 for answers or $\text{£}79.92$ and $\text{£}80.43$ to justify the choice C1 for comment on the need to cut some Type B tiles QWC: Decision must be stated, with all calculations attributable OR M1 for either 330×40 or 90×30 or 10×10 or 15×15 A1 for 15900 and (100 or 225) M1 for $15900 \div 100$ or $15900 \div 225$ A1 ft for 10 A boxes needed ($'15900' \div '100'$) $\div 20$ rounded up to nearest whole number) or 7 B boxes needed ($'15900' \div '225'$) $\div 12$ rounded up to nearest whole number) B1 for answers or $\text{£}79.92$ and $\text{£}80.43$ to justify the choice C1 for comment on the need to cut some Type B tiles QWC: Decision must be stated, with all calculations attributable |
| Total for Question: 6 marks | | | | |

M8.

| Answer | Mark | Additional Guidance |
|--------|------|---|
| 24 | 2 | M1 for list of at least 3 multiples of 8 and 2 multiples of 12 |

| | | |
|-----------------------------|--|--|
| | | or correct method to write either 8 or 12 as product of prime factors A1 cao |
| Total for Question: 2 marks | | |

M9.

| | Working | Answer | Mark | Additional Guidance |
|-----------------------------|---------------------------|--------|------|--|
| (a) | $\frac{24}{8} \times 300$ | 900 | 2 | $\frac{24}{8}$ oe or $\frac{300}{8}$ oe or 300 + 300 + 300 or 37.5 seen A1 for 900 (SC: B1 for sight of two of 3, 360 or 15) |
| (b) | $\frac{12}{6} \times 120$ | 180 | 2 | $\frac{12}{6}$ or 1.5 oe, eg 120 + ' $\frac{120}{2}$ ', or '120 ÷ 8' × 12 A1 for 180 (SC: B1 for sight of two of 450, 1.5 or 7.5) |
| Total for Question: 4 marks | | | | |

M10.

| Working | Answer | Mark | Additional Guidance |
|--|-------------|------|---|
| $\frac{300 \times 10}{0.6} = \frac{3000}{0.6}$ | 5890 – 6040 | 3 | M1 for any two of 300, 10 or 0.5 $\frac{3000}{0.6}$ or 300 × 20 or 600 × 10 or $\frac{3020}{0.6}$ or 302 × 20 or 604 × 10 A1 for 5890 – 6040 SC: B2 for answer of 1500 or 1510 |
| Total for Question: 3 marks | | | |

M11.

| Working | Answer | Mark | Additional Guidance |
|---|---------------------|------|--|
| $\frac{2^4 \times 2^3}{2^4}$ $\frac{2^4 \times 2^3}{2^4} = \frac{2^{4+3}}{2^4} = 2^{3+4}$ $\frac{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2}{2 \times 2 \times 2 \times 2 \times 2} = 2 \times 2$ OR $2^4 = 16, 2^3 = 8, \text{ SO } p = 16 \times 8 = 128$ $2^5 = 32 = q$ $\frac{p}{q} = 128 \div 32$ | 2 ² or 4 | 2 | M1 for adding the indices in p and then subtracting the indices in the quotient A1 for 2 ² or 4 OR $\frac{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2}{2 \times 2 \times 2 \times 2 \times 2} = 2 \times 2$ M1 for with an attempt to cancel A1 for 2 ² or 4 OR M1 for 128 and 32 seen A1 for 2 ² or 4 |

M12.

| Working | Answer | Mark | Additional Guidance |
|---|--------|------|--|
| $300 \div (2 + 3 + 5) \times 5 =$ $300 \div 10 \times 5 =$ | 150 | 2 | M1 for $300 \div (2 + 3 + 5)$ or 300×5 or 30 seen or 60:90:150 A1 cao |
| Total for Question: 2 marks | | | |

M14.

| Working | Answer | Mark | Additional Guidance |
|---|---------|------|---|
| Colin saves $\frac{1}{1+10} = \frac{1}{10}$ of his wage Anwar saves 12%, Bethany saves $1 - \frac{7}{8} - \frac{1}{8}$ of her wage $\frac{1}{10} = 0.1$, $12\% = 0.12$, $\frac{1}{8} = 0.125$ OR $\frac{1}{10} = 10\%$, 12% , $\frac{1}{8} = 12.5\%$ OR Let the weekly wage be £100 say Colin saves $\frac{1}{1+10} = \frac{1}{10}$ of his wage Anwar saves 12%, Bethany saves $1 - \frac{7}{8} - \frac{1}{8}$ of her wage $\frac{1}{10}$ of £100 = $\frac{1}{10} \times 100 = 10$ 12% of £100 = $\frac{12}{100} \times 100 = 12$ $\frac{1}{8}$ of £100 = $\frac{1}{8} \times 100 = 12.5$ | Bethany | 4 | B1 for $\frac{1}{1+10} = \frac{1}{10}$ B1 for $1 - \frac{7}{8} - \frac{1}{8}$ M1 for conversion to a decimal or 0.1 or 0.12 or 0.125 seen A1 cao for Bethany OR M1 for conversion to a percentage or 10% or 12.5% seen A1 cao for Bethany OR B1 for $\frac{1}{1+10} = \frac{1}{10}$ [or M1 for $100 \div (1+9)$] B1 for $1 - \frac{7}{8} - \frac{1}{8}$ {or A1 ft for £100 – “£87.50” (= £12.50)} M1 for $\frac{1}{10} \times 100 (=10)$ [or A1 for 10] or $\frac{12}{100} \times 100 (=12)$ or $\frac{1}{8} \times 100 (=12.5)$ {or $\frac{7}{8} \times 100 (=87.5)$ } A1 cao for Bethany |
| Total for Question: 4 marks | | | |

M15.

| | | Working | Answer | Mark | Additional Guidance |
|--|-----|---|-------------------------------|------|---|
| QWC (i, ii, iii) FE | (a) | <p>Wall area = $330 \times 40 + 90 \times 30 = 13200 + 2700 = 15900 \text{ cm}^2$</p> <p>Tile A area = $10 \times 10 = 100 \text{ cm}^2$</p> <p>No of tiles = $15900 \div 100 = 159$</p> <p>No of boxes needed = 8 ($20 \times 8 = 160$ tiles)</p> <p>$\text{£}9.99 \times 8 = \text{£}79.92$</p> <p>Tile B area = $15 \times 15 = 225 \text{ cm}^2$</p> <p>No of tiles = $15900 \div 225 = 70$ ($225 \times 70 = 15750$) + 1</p> <p>No of boxes needed = 6 ($12 \times 6 = 72$ tiles) but some tiles will need to be cut, so 7 boxes needed</p> <p>$\text{£}11.49 \times 7 = \text{£}80.43$</p> <p>OR</p> <p>$330 \div 10 = 33$ A tiles per long row</p> <p>$40 \div 10 = 4$ long rows</p> <p>$33 \times 4 = 132$ tiles</p> <p>$90 \div 10 = 9$ tiles per short row</p> <p>$30 \div 10 = 3$ short rows</p> <p>$9 \times 3 = 27$ tiles</p> <p>$132 + 27 = 159$ tiles</p> <p>No of boxes needed = 8 ($20 \times 8 = 160$ tiles)</p> <p>$\text{£}9.99 \times 8 = \text{£}79.92$</p> <p>$330 \div 15 = 22$ B tiles per long row</p> <p>$40 \div 15 = 3$ long rows (1 row of tiles will be cut)</p> <p>$22 \times 3 = 66$ A tiles</p> <p>$90 \div 15 = 6$ tiles per short row</p> <p>$30 \div 15 = 2$ short rows</p> <p>$6 \times 2 = 12$ tiles</p> <p>$66 + 12 = 78$ tiles</p> <p>No of boxes needed = 7 ($12 \times 7 = 84$ tiles)</p> <p>$\text{£}11.49 \times 7 = \text{£}80.43$</p> | Tile A is the most economical | 6 | <p>M1 for either 330×40 or 90×30 or 10×10 or 15×15</p> <p>A1 for 15900 and (100 or 225)</p> <p>M1 for $15900 \div 100$ or $15900 \div 225$</p> <p>A1 ft for 10 A boxes needed ('15900' \div '100') \div 20 rounded up to nearest whole number) or 7 B boxes needed ('15900' \div '225') \div 12 rounded up to nearest whole number)</p> <p>B1 for answers or $\text{£}79.92$ and $\text{£}80.43$ to justify the choice</p> <p>C1 for comment on the need to cut some Type B tiles QWC: Decision must be stated, with all calculations attributable</p> <p>OR</p> <p>M1 for $330 \div 10$ or $90 \div 10$ or $330 \div 15$ or $90 \div 15$</p> <p>A1 for (33 and 9) or (22 and 6)</p> <p>M1 for $33 \times 4 + 9 \times 3$ or $22 \times 3 + 6 \times 2$</p> <p>A1 ft for 10 A boxes needed ('33 \times 4' \div '9 \times 3') \div 20 rounded up to nearest whole number) or for 7A boxes needed ('22 \times 3' \div '6 \times 2') \div 12 rounded up to nearest whole number)</p> <p>B1 for answers or $\text{£}79.92$ and $\text{£}80.43$ to justify the choice</p> <p>C1 for comment on the need to cut some Type B tiles QWC: Decision must be stated, with all calculations attributable</p> |
| | (b) | <p>The carton can have dimensions</p> <p>$42 \text{ cm} \times 31.5 \text{ cm} \times 21 \text{ cm}$ or</p> <p>$63 \text{ cm} \times 21 \text{ cm} \times 21 \text{ cm}$ or</p> <p>$84 \text{ cm} \times 31.5 \text{ cm} \times 10.5 \text{ cm}$ or</p> | Net | 3 | <p>B1 for quoting a correct set of dimensions (could be simply on the diagram)</p> <p>M1 for a net showing 6 rectangles that could form a cuboid</p> <p>A1 for an accurate scale drawing</p> |

| | | | | |
|------------------------------------|--|--|--|-------------------------------|
| | 63 cm × 42 cm × 10.5 cm or 126 cm × 21 cm × 10.5 cm | | | or lengths labeled accurately |
| Total for Question: 9 marks | | | | |

M16

| | Working | Answer | Mark | Additional Guidance |
|------------------------------------|---|-----------------|------|--|
| (a) | | $\frac{1}{4}$ | 1 | B1 for $\frac{1}{4}$ or 0.25 or 4 ⁻¹ |
| (b) | $(2 - 1) + \left(\frac{4}{5} - \frac{3}{4}\right)$ $= 1 + \left(\frac{16}{20} - \frac{15}{20}\right)$ or $\frac{14}{5} - \frac{7}{4} = \frac{56}{20} - \frac{35}{20} = \frac{21}{20}$ or 2.8 - 1.75 | $1\frac{1}{20}$ | 3 | M1 for attempt to convert to fractions with common denominator, e.g. two fractions denominator 20 A1 correct conversion: $\frac{16}{20}$ and $\frac{15}{20}$ oe, $\frac{56}{20}$ or $\frac{35}{20}$ oe or $\frac{21}{20}$ or 1 $\frac{1}{20}$ A1 for $\frac{21}{20}$ or 1 $\frac{1}{20}$ OR M1 for 0.8 – 0.75 (or 2.8 – 1.75) A2 for 1.05 (A1 for 0.05) |
| (c) | | Reason | 1 | B1 for correct reason, e.g. '1/3 = 0.3 recurring (accept 0.33)' or '0.3 = 3/10' |
| Total for Question: 5 marks | | | | |

M17.

| | Working | Answer | Mark | Additional Guidance | | | | | | | | | |
|---------------------------|---|--------|------|---------------------|----|------|-----|---|------|-----|----------------|---|--|
| QWC (ii, iii) FE | <p>5% of £600 = $6 \times 5 = 30$</p> <p>$243 \times 30 = 7290$</p> <p>$(243 + 64 + 77 + 36) \times 18$ $= 420 \times 18$</p> <p>Method 1: $420 \times 10 = 4200$ + $420 \times 8 = \underline{3360}$ 7560</p> <p>Method 2:</p> <table border="1"><tr><td>×</td><td>400</td><td>20</td></tr><tr><td>10</td><td>4000</td><td>200</td></tr><tr><td>8</td><td>3200</td><td>160</td></tr></table> <p>$4000 + 200 + 3200 + 160 = 7560$</p> <p>Method 3:</p> | × | 400 | 20 | 10 | 4000 | 200 | 8 | 3200 | 160 | £18 per member | 5 | <p>$\frac{6}{100} \times 600$ or</p> <p>M1 for 600 equivalent</p> <p>A1 for 7290</p> <p>M1 for a complete method, condoning one multiplication error</p> <p>A1 for 7560</p> <p>C1 for comparing the two results and clearly indicating, with reason, the suggestion which is better. For example, £18 per member raises the most money and the refurbishment is shared by all members</p> <p>[Accept the 5% levy since it raises enough money and the clubhouse is likely to be used more by full members than any</p> |
| × | 400 | 20 | | | | | | | | | | | |
| 10 | 4000 | 200 | | | | | | | | | | | |
| 8 | 3200 | 160 | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|------------------------------------|---|--------|---|---|--|--------|--------|--------|---|--------|--------|--------|---|--|--|---|
| | <table><tr><td>4</td><td>2</td><td>0</td><td></td></tr><tr><td>0 4</td><td>0 2</td><td>0 0</td><td>1</td></tr><tr><td>3 2</td><td>1 6</td><td>0 0</td><td>8</td></tr></table> | 4 | 2 | 0 | | 0 4 | 0 2 | 0 0 | 1 | 3 2 | 1 6 | 0 0 | 8 | | | other] QWC: Decision and justification should be clear, with working for 1st and 2nd M1 clearly presented and attributed |
| 4 | 2 | 0 | | | | | | | | | | | | | | |
| 0 4 | 0 2 | 0 0 | 1 | | | | | | | | | | | | | |
| 3 2 | 1 6 | 0 0 | 8 | | | | | | | | | | | | | |
| Total for Question: 5 marks | | | | | | | | | | | | | | | | |

M18.

| Working | Answer | Mark | Additional Guidance |
|--|---|------|---|
| LCM (40, 24) = 120 Rolls $120 \div 40 =$ Sausages $120 \div 24 =$ OR Rolls 40 is $2 \times 2 \times 2 (\times 5)$ Sausages 24 is $2 \times 2 \times 2 (\times 3)$ 40, 80, 120 , 160, 200, 240, 280 24, 48, 72, 96, 120 , 144, 168 | Rolls (packs) 3 Sausages (trays) 5 Hot dogs 120 | 5 | M1 attempts multiples of either 40 or 24 (at least 3 but condone errors if intention is clear) M1 attempts multiples of both 40 and 24 (at least 3 of each but condone errors if intention is clear) M1 (dep on M1) division by 40 or 24 or counts up multiples. (implied if one answer correct or answers reversed) A1 rolls (packs) 3, sausages (trays) 5 OR any multiple of 3,5 A1 hot dogs 120 or ft on both of their packs or ft 'common multiple' OR M1 expansion of either number into factors M1 demonstrates one of the expansions that includes 8 oe M1 demonstrates a 2 nd expansion that includes 8 oe A1 cao for rolls (packs) 3, sausages (trays) 5 A1 hot dogs 120 |
| Total for Question: 5 marks | | | |

M19.

| Working | Answer | Mark | Additional Guidance |
|---|--------|------|--|
| $3600 \times 4 = 14400$ $\frac{2}{5} = 40\%$ $\frac{1}{4} = 25\%$ $30 + 40 + 25 = 95\%$ Saved 5% 10% of 14400 = 1440 5% of 1440 = $1440 \div 2$ | £720 | 5 | M1 3600×4 (= 14400) B1 for $\frac{2}{5} = 40\%$ or $\frac{1}{4} = 25\%$ M1 for $30\% + 40\% + 50\%$ (= 95%) M1 for complete method to find 5% of 14400 A1 cao OR M1 for 3600×4 (= 14400) B1 for $30\% = \frac{3}{10}$ M1 for $\frac{3}{10} + \frac{2}{5} + \frac{1}{4}$ (- 10) oe |

| | | | |
|-----------------------------|--|--|---|
| | | | <p>M1 for complete method to find $\frac{1}{20}$ of 14400 A1 cao OR M1 3600×4 (= 14400) M1 for 0.3×14400 oe (= 4320) M1 for $\frac{2}{6} \times 14400$ oe (= 5760) M1 $14400 - 3600 - 4320 - 5760$ A1 cao SC if no other marks award M1 for 0.3×3600 (= 1080) M1 for $\frac{2}{5} \times 3600$ (= 1440)</p> |
| Total for Question: 5 marks | | | |

M20.

| Answer | Mark | Additional Guidance |
|-----------------------------|------|--|
| 300, 90, 45, 225 | 3 | <p>M2 for any one of $200 + 100$ or $60 + 30$ or $30 + 15$ or $150 + 75$ or 300 or 90 or 45 or 225 seen. A1 cao or M1 for $12 \div 8$ or $6 \div 4$ or $3 \div 2$ or sight of 1.5 M1 for $200 \times "1.5"$ or $60 \times "1.5"$ or $30 \times "1.5"$ or $150 \times "1.5"$ A1 cao or M1 $200 \div 8$ or 25 M1 25×12 or 300 A1 cao or M1 $200 \div 4$ or 50 M1 50×6 or 300 A1 cao or M1 $200 \div 2$ or 100 M1 100×3 or 300 A1 cao (In any of the above methods the M marks can be awarded for equivalent calculations with 60, 30 or 150)</p> |
| Total for Question: 3 marks | | |

M21.

| | Answer | Mark | Additional Guidance |
|-----|--------|------|------------------------|
| (a) | 44.8 | 1 | B1 for 44.8 cao |
| (b) | 4.48 | 1 | B1 for 4.48 cao |
| (c) | 1.4 | 1 | B1 for 1.4 cao |

Total for Question: 3 marks

M22.

| Working | Answer | Mark | Additional Guidance |
|------------------------------|--------|------|--|
| $\frac{10 \times 30}{8 - 3}$ | 100 | 3 | M1 for two of 10, 30, 6, 3 $\frac{300}{3}$ $\frac{330}{3}$ A1 for $\frac{300}{3}$ or for $\frac{330}{3}$ A1 for answer in range 100 – 110 |
| Total for Question: 3 marks | | | |

M23.

| Working | Answer | Mark | Additional Guidance |
|---|--------|------|--|
| 20, 40, 60, ..., 180, ... 36, 72, 108, ..., 180, ... | 180 | 2 | M1 for 20, 40, 60... and 36, 72, 108, ... A1 for 180 cao Alternative: M1 for $2 \times 2 \times 5$ and $2 \times 2 \times 3 \times 3$ A1 for 180 cao |
| Total for Question: 2 marks | | | |

M24.

| | Working | Answer | Mark | Additional Guidance |
|-----------------------------|--|--------------------|------|--|
| (a) | $5.000 \div 8$ | 0.625 | 2 | M1 for $5 \div 8$ or $1 \div 8 \times 5$ A1 cao |
| (b) | $\frac{14}{35} + \frac{6}{35}$ <u>Alternative</u> $0.4 + 0.143$ | $\frac{10}{35}$ oe | 2 | M1 for correct common denominator of two fractions with at least one numerator correct $\frac{10}{35}$ $\frac{30}{70}$ A1 for $\frac{10}{35}$ oe (for example $\frac{30}{70}$) <u>Alternative</u> M1 for 0.4 and 0.14(2857...) (correct to 2dp.) A1 for 0.54 or better |
| (c) | $\frac{6}{2} \times \frac{8}{6} = \frac{4}{1}$ <u>Alternative</u> 2.5×1.6 | 4 | 3 | M1 for $\frac{5}{2}$ or $\frac{8}{6}$ oe $\frac{6}{2} \times \frac{8}{6}$ M1 for $\frac{6}{2} \times \frac{8}{6}$ A1 for 4 oe (accept $\frac{40}{10}$) <u>Alternative</u> M1 For 2.5 and 1.6 M1 For 4 with any number of 0s with or without a decimal point A1 4 |
| Total for Question: 7 marks | | | | |

M25.

| | Working | Answer | Mark | Additional Guidance |
|-----------------------------|---------|--------|------|------------------------------|
| (a) | | 1632 | 1 | B1 for 1632 or 1632.0 |
| (b) | | 16.32 | 1 | B1 for 16.32 cao |
| (c) | | 3.4 | 1 | B1 for 3.4 cao |
| Total for Question: 3 marks | | | | |

M26.

| | Working | Answer | Mark | Additional Guidance |
|-----------------------------|---------------|---------|------|--|
| (a) | $300 \div 25$ | 12 | 2 | M1 for $25 + 25 + 25 + \dots$ or " 3 " $\div 25$ or $\pounds 1 = 4$ oe A1 for 12 cao |
| (b) | | $3x$ | 1 | B1 for $3x$ or $3 \times x$ |
| (c) | | $x + 5$ | 1 | B1 for $x + 5$ cao |
| Total for Question: 4 marks | | | | |

M27*.

| | Working | Answer | Mark | Additional Guidance |
|-----------------------------|--|--------------------------------|------|--|
| (a) | $84 = 2 \times 42$ $= 2 \times 2 \times 21$ $= 2 \times 2 \times 3 \times 7$ OR Use of factor trees | $2 \times 2 \times 3 \times 7$ | 2 | M1 for a systematic method of at least 2 correct divisions by a prime number or an equivalent factor tree or a full process with one calculation error A1 for $2 \times 2 \times 3 \times 7$ or $2^2 \times 3 \times 7$ |
| (b) | LCM of 4, 6 and 8 is 24 OR Red = after 4, 8, 12, 16, 20, 24 , 28, Blue = after 6, 12, 18, 24 , 30, 36, White = after 8, 16, 24 , 32, 40, OR Table of times from midday onwards into the next day, with indication when a red, blue and white pill are to be taken. | Midday on the following day | 2 | M1 for an attempt to find the LCM A1 for midday (or equivalent) the next day OR M1 for listing multiples of 4, 6 and 8 A1 for midday (or equivalent) the next day OR M1 for a correct timetable showing when pills are taken A1 for midday (or equivalent) the next day |
| Total for Question: 4 marks | | | | |

M27.

| Working | Answer | Mark | Additional Guidance |
|---------|--------|------|---------------------|
|---------|--------|------|---------------------|

| M28. | | | | |
|-----------------------------|---------|--------------------------------|------|---|
| | Working | Answer | Mark | Additional Guidance |
| (a) | | $2 \times 2 \times 3 \times 7$ | 3 | <p>M2 for a full systematic method of at least 3 divisions by prime numbers or factor trees, condoning one calculation error.</p> <p>(M1 for 84 written as either 2×42 or 3×28 or 7×12 or equivalent division or a full process with 2 calculation errors)</p> <p>A1 for $2 \times 2 \times 3 \times 7$ (accept $2^2 \times 3 \times 7$ but not 2, 2, 3, 7)</p> <p>[Note: $1 \times 2 \times 2 \times 3 \times 7$ gets M2A0]</p> |
| (b) | | 7 | 2 | <p>M1 for listing factors of 35 and 84 (at least 3 correct for each, condoning one error. This could be in factor trees or factor pairs, etc)</p> <p>A1 cao</p> |
| Total for Question: 5 marks | | | | |

M29.

| Working | Answer | Mark | Additional Guidance |
|---|--------------------|------|--|
| $\frac{14}{36} + \frac{6}{36}$ <u>Alternative</u> $0.4 + 0.143$ | $\frac{10}{36}$ oe | 2 | M1 for correct common denominator of two fractions with at least one numerator correct $\frac{10}{36}$ oe (for example $\frac{30}{70}$) <u>A1</u> for $\frac{10}{36}$ oe (for example $\frac{30}{70}$) <u>Alternative</u> M1 for 0.4 and 0.14(2857...) (correct to 2dp.) A1 for 0.54 or better |
| Total for Question: 2 marks | | | |

M30.

| | Working | Answer | Mark | Additional Guidance |
|-----|---|--------|------|---|
| (a) | $12 \div 3 \times 2 (= 8)$ 8×40 <u>Alternative</u> $3 \text{ tins} = 40 \times 2 = 80$ $12 \text{ tins} = 80 \times 4$ | 3.20 | 3 | M2 for $40 \times 12 \div 3 \times 2$ or better (inc. adding 8 lots of 40p) (M1 for using 2 of the 3 operations or 8 seen) A1 cao OR M1 for $3 \text{ tins} = 40 \times 2$ M1 (dep) for “80” $\times 4$ A1 cao [SC: B2 for sight of digits 320 if M0 scored] [SC: B1 for 480 or 4.80 if M0 scored] |
| (b) | $\frac{16}{100} \times 20 = 3$ OR $10\% = 20 \div 10 = 2$ $5\% = 2 \div 2 = 1$ $15\% = 2 + 1 = 3$ $20 - 3$ <u>Alternative</u> 20×0.85 | 17 | 3 | $\frac{16}{100}$ M1 for $\frac{16}{100} \times 20$ oe or a correct method to work out 10% and 5% of 20 or 2 and 1 seen A1 for 3 cao A1 ft for $20 - “3”$ dependant upon M1 scored [SC: B2 for 3 on answer line with no working] <u>Alternative</u> B1 cao for 85 or 0.85 seen $\frac{100 - 16}{100}$ M1 for $\frac{100 - 16}{100}$ or “ $1 - 0.15$ ” $\times 20$ $\frac{100 - 16}{100}$ A1 ft for a correct solution of $\frac{100 - 16}{100}$ or “ $1 - 0.15$ ” $\times 20$ OR 17 (dep on M1 scored) |
| | | | | Total for Question: 6 marks |

M31.

| Working | Answer | Mark | Additional Guidance |
|---|--------|------|--|
| $48 \div 8 = 6$ $6 \times 5 - 6 \times 3 = 12$ | 12 | 3 | M1 for $48 \div “5 + 3”$ M1 (dep) for “6” $\times 5$ or 30 seen or “6” $\times 3$ or 18 seen or “6” $\times 2$ A1 cao |
| Total for Question: 3 marks | | | |

M32.

| | Working | Answer | Mark | Additional Guidance |
|-----------------------------|---|--------|------|--|
| (a) | $12 \div 3 \times 2 (= 8)$ 8×40 Alternative: $3 \text{ tins} = 40 \times 2 = 80$ $12 \text{ tins} = 80 \times 4$ | 3.20 | 3 | M2 for $40 \times 12 \div 3 \times 2$ or better (inc. adding 8 lots of 40p) (M1 for using 2 of the 3 operations or 8 seen) A1 cao OR M1 for $3 \text{ tins} = 40 \times 2 (=80)$ M1 for “80” $\times 4$ A1 cao [SC: if M0 scored: B2 for digits 32, or B1 for 480 or 4.80] |
| (b) | $\frac{9}{12} \times 100$ | 75 | 2 | $\frac{9}{12}$ M1 for $\frac{9}{12}$ oe A1 cao |
| (c) | $\frac{15}{100} \times 20 = 3$ OR $10\% = 20 \div 10 = 2$ $5\% = 2 \div 2 = 1$ $15\% = 2 + 1 = 3$ $20 - 3$ Alternative: 20×0.85 | 17 | 3 | $\frac{15}{100}$ M1 for $\frac{15}{100} \times 20$ oe or a correct method to work out 10% and 5% of 20, or 2 and 1 seen A1 for 3 cao A1 ft for $20 - “3”$ dependent on M1 scored Alternative: B1 cao for 85 or 0.85 seen $\frac{100 - 15}{100}$ M1 for $\frac{100 - 15}{100} \times 20$ or “ $1 - 0.15$ ” $\times 20$ A1 ft for a correct solution of $\frac{100 - 15}{100} \times 20$ or “ $1 - 0.15$ ” $\times 20$ or 17 dependent on M1 scored SC (for both alternatives) B2 for £3 |
| Total for Question: 8 marks | | | | |

M33.


| Working | Answer | Mark | Additional Guidance |
|---|--------|------|---|
| $\frac{7 \times 200}{0.36} = \frac{1400}{0.06}$ | 28000 | 3 | B1 for any two of 7, 200 or 0.05 M1 for correct processing of at least two of 7, 200 or 190 and 0.05 or 0.1 A1 26600 – 28000 |
| Total for Question: 3 marks | | | |

M34.

| | Answer | Mark | Additional Guidance |
|-----|--------|------|--|
| (a) | 62.5 | 1 | B1 cao |
| (b) | 63.5 | 1 | B1 for 63.5 (accept 63.49 or 63.49.. or any evidence that the 9 is recurring or 63.499 or better) |

Total for Question: 2 marks

M35.

| | Working | Answer | Mark | Additional Guidance |
|-----------------------------|---|---|------|--|
| (a) | $x^2 = 72 \div 2$ | 6 | 2 | M1 for $72 \div 2$ or 36 seen A1 6 or -6 or ± 6 |
| (b) | $72 = 2 \times 36$ $= 2 \times 2 \times 18$ $= 2 \times 2 \times 2 \times 9$  | $2 \times 2 \times 2 \times 3 \times 3$ | 2 | M1 for a systematic method of at least 2 correct divisions by a prime number or factor tree or a full process with one calculation error; can be implied by digits 2, 2, 2, 3, 3 on answer line A1 for $2 \times 2 \times 2 \times 3 \times 3$ or $2^3 \times 3^2$ or [Note $1 \times 2 \times 2 \times 2 \times 3 \times 3$ gets M1 A0] |
| Total for Question: 4 marks | | | | |

M36.

| | Answer | Mark | Additional Guidance |
|-----------------------------|---------|------|---------------------|
| (a) | 15.456 | 1 | B1 cao |
| (b) | 0.15456 | 1 | B1 cao |
| (c) | 3220 | 1 | B1 cao |
| Total for Question: 3 marks | | | |

M37.

| | Working | Answer | Mark | Additional Guidance |
|-----|--|----------------|------|--|
| (a) | $\frac{9}{800}$ | $\frac{3}{20}$ | 2 | M1 $\frac{90}{800}$ A1 $\frac{3}{20}$ cao [SC: B1 for 0.15 or 15% if M0 scored] |
| (b) | $\frac{130}{800} \times 100$ OR $\frac{130}{800} = \frac{30}{100}$ | 30 | 2 | M1 $\frac{180}{800} \times 100$ A1 cao OR M1 $\frac{180}{800} = \frac{30}{100}$ or attempt to cancel to 100 A1 cao |
| (c) | $600 - (90 + 180)$ $= 330$ blue or green $330 \div 3$ | 110 | 2 | M1 $["600 - (90 + 180)"] \div 3$ A1 cao [SC: B1 for an answer of 140 or 170 if M0 scored] |

Total for Question: 6 marks

M38.

| | Working | Answer | Mark | Additional Guidance |
|-----------------------------|--|------------------------------|------|--|
| (a) | $66 = 2 \times 33 = 2 \times 3 \times 11$ | $2 \times 3 \times 11$ | 2 | M1 Successive division by 2 and 3 either by a factor tree or by repeated division A1 cao |
| (b) | $132^2 = 4 \times 66^2$ $2^2 \times (2 \times 3 \times 11)^2$ OR $132^2 = 17424 = 2 \times 8712$ $= 2 \times 2 \times 4356 =$ $2^3 \times 2178 = 2^4 \times 1089$ $= 2^4 \times 3 \times 363 = \dots$ | $2^4 \times 3^2 \times 11^2$ | 2 | M1 $(2 \times 3 \times 11)^2$ A1 $2^4 \times 3^2 \times 11^2$ oe OR M1 $132^2 = 17424$ and at least 3 correct steps in for example the factor tree |
| Total for Question: 4 marks | | | | |

M40.

| | Working | Answer | Mark | Additional Guidance |
|-----------------------------|--|--------|------|---|
| FE | $15400 \div 70 \times 100 =$ 22000 $22000 \times 2 \div 100$ | 440 | 4 | M1 $15400 \div 70 \times 100$ oe A1 22000 M1 '22000' $\times 2 \div 100$ oe A1 cao |
| Total for Question: 4 marks | | | | |

M39.

| | Working | Answer | Mark | Additional Guidance |
|------------------|------------------|---------------------------------------|------|---|
| QWC iii FE | See table at end | Best month and supporting explanation | 4 | M1 Converts for at least 2 months to a common format (fractions, decimals or %age) A1 all correct C1 for Council target: No (yes) dep on M1 and consistent with the candidates calculations QWC: Decisions should be started, following through from working out |

| | | | | |
|-----------------------------|--|--|--|---|
| | | | | C1 March with all calculations correct for the 3 months QWC: Decisions should be started, following through from working out |
| Total for Question: 4 marks | | | | |

| | Fraction | Decimal | % | kg |
|-----|------------------|---------|-------|-----------|
| Jan | $\frac{1}{10}$ | 0.1 | 10% | Not known |
| Feb | $\frac{1}{8}$ | 0.125 | 12.5% | 15 kg |
| Mar | $\frac{13}{100}$ | 0.13 | 13% | 14.56 kg |

M40.

| | Working | Answer | Mark | Additional Guidance |
|-----------------------------|---|--------|------|--|
| FE | Area of the room $= 4 \times 8 + 4 \times 6 = 56$ Area of a tile $= 0.5 \times 0.5 = 0.25$ Number of tiles $= 56 \div 0.25 = 224$ Cost $= 4 \times 224$ OR No of tiles around room $= 2 \times \text{lengths of room} = 8, 16, 16, 12$ Total number of tiles $= 8 \times 16 + 8 \times 12 = 224$ Cost $= 4 \times 224$ | £ 896 | 6 | M1 for full method for finding the area of the room A1 at least one area correct B1 for area of tile $= 0.25\text{m}^2$ or 2500 cm^2 or 4 tiles $= 1\text{m}^2$ M1 for area of room \div area of a tile M1 for $4 \times$ number of tiles A1 cao OR M1 for doubling each length to show number of tiles for each side B1 for 8, 16, 16 and 12 M1 for a full method of finding the number of tiles $(12 \times 16 + 8 \times 4)$ A1 for at least one 'section' correct M1 for $4 \times '224'$ A1 cao |
| Total for Question: 6 marks | | | | |