



## GCSE Foundation/Higher 07

*Number*

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Mark scheme



85 minutes



74 marks

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*Calculation*

**M1.** (a)  $\frac{3}{10}$

*B1 equivalent fraction to  $\frac{3}{10}$  eg  $\frac{5}{50}$*

*or*

*B1  $\frac{n}{50}$  with its correct simplest form*

**B2**

(b) At least one product attempted or one correct value (not 0 or 8)

$$0 \times 13$$

$$1 \times 8$$

$$2 \times 6 (= 12)$$

$$3 \times 8 (= 24)$$

$$4 \times 15 (= 60)$$

**M1**

5 products attempted and added

*Allow 4 products if 0 not shown*

**M1 dep**

104

*oe eg 4 more*

*SC2 117*

**A1**

**[5]**

**M2.**  $50(p) - \frac{30}{100} \times 50(p)$

or  $\frac{70}{100} \times 50(p)$

*oe*

**M1**

35(p) or (£)(0).35

420(p) or (£)4.2(0)

140(p) or (£)1.4(0)

**A1**

$$\frac{3}{4} \times 48(p) \text{ or } 9 \times 48(p)$$

$$\text{or } 3 \times 48(p)$$

M1

$$36(p) \text{ or } (£)(0).36$$

$$432(p) \text{ or } (£)4.32$$

$$144(p) \text{ or } (£)1.44$$

*Note: for **both** A marks to be awarded they must be buying the same number of tins*

A1

Correct conclusion from their working with all calculations shown

*Strand (iii)*

*Must have both Ms awarded and be comparing like with like*

Q1

[5]

M3.

$$\frac{10 \times 10}{0.5}$$

oe eg  $\frac{10^2}{0.5}$

M1

$$200$$

A1

[2]

M4. Any two of 800 or  $2^2$  (or 4) or 10 seen

M1

$$800 \div 40 \text{ or } 200 \div 10 \text{ or } 80 \div 4$$

oe

M1

$$20$$

A1

[3]

**M5.** (a) 2.56

**B1**

(b) 81.92

**B1**

**[2]**

**M6.**  $6x - 2 (=) 2x$   
oe

**M1**

$6x - 2x = 2$  or  $4x = 2$   
oe

**M1 dep**

$\frac{1}{2}$   
oe

**A1**

**Alternative method**

Input > 0.5 with correct output

**M1**

Input < 0.5 with correct output

**M1**

0.5  
oe

**A1**

**[3]**

**M7.**  $240 \div 12 (= 20)$

**M1**

$\left[ \frac{15}{100} \times \text{their } 20 + \text{their } 20 \right]$  or 23

**M1**

$8 \times \text{their } 23$

**M1**

184

**A1**

Correct conclusion from their working with all calculations shown

*Strand (iii)*

*dep on all M marks and working seen*

*The students have saved enough*

**Q1**

### Alternative method 1

$$240 \div 12 (= 20)$$

M1

$$\text{their } 20 \times 8 (= 160)$$

M1

$$\frac{15}{100} \times \text{their } 160 + \text{their } 160$$

M1

$$184$$

A1

Correct conclusion from their working with all calculations shown

*Strand (iii)*

*dep on all M marks and working seen*

*The students have saved enough*

Q1

### Alternative method 2

$$200 \div 8 (= 25)$$

*Average amount saved per student*

M1

$$240 \div 12 (= 20)$$

M1

$$\left[ \frac{15}{100} \times \text{their } 20 + \text{their } 20 \right] \text{ or } 23$$

*oe eg 1.15 \times \text{their } 20*

M1

$$25 \text{ and } 23$$

A1

Correct conclusion from their working with all calculations shown

*Strand (iii)*

*dep on all M marks and working seen*

*The students have saved enough*

Q1

**Alternative method 3**

$$\left[ \frac{15}{100} \times 240 + 240 \right] \text{ or } 276$$

oe eg  $1.15 \times 240$

**M1**

their  $276 \div 12 (= 23)$

**M1**

their  $23 \times 8$

**M1**

184

**A1**

Correct conclusion from their working with all calculations shown

*Strand (iii)*

*dep on all M marks and working seen*

*The students have saved enough*

**Q1**

**[5]**

**M8.** Sight of  $\sqrt{100}$  or 10 and 20

**M1**

0.5

oe (processed) eg,  $\frac{1}{2}$

**A1**

**[2]**

**M9.** Multiples of 8 (at least 4)

8, 16, 24, 32, 40, 48, 56, ...

*Either  $8x$  or  $9(12 - x)$        $x + y = 12$*

**M1**

Multiples of 9 (at least 4)

9, 18, 27, 36, 45, 54, 63, ...

*$8x + 9(12 - x) = 103$        $8x + 9y = 103$*

**M1**

40 and 63

$$8x + 108 - 9x = 103$$

$$9x + 9y = 108$$

M1

5

A1

[4]

**M10.** (a) 5.285(7 ...)

$$\text{or } 5\frac{2}{7}$$

B1

(b) 5.3

B1ft

[2]

**M11.** (a) (i) 11

B1

8

B1

(ii) Odd  $\times$  3 = Odd

$$\text{Odd} \times \text{Odd} = \text{Odd}$$

B1

$$\text{Odd} + 3 = \text{Even}$$

$$\text{Odd} + \text{Odd} = \text{Even}$$

B1

(b) (i) 10, 16, 8

B1

(ii)  $2n$

B1

$$2n + 6$$

B1

$$n + 3$$

B1

[8]

**M12.** Any two correct calculations of 45 – 55 cookies

eg,  $3 \times '18' = 54 = £14.97$  and  $50 \times 0.75 = £37.50$

$$50 \times 0.75 = 37.5(0)$$

$$10 \times 2.25 = 22.5(0)$$

$$6 \times 2.99 = 17.94$$

$$4 \times 3.99 = 15.96$$

$$3 \times 4.99 = 14.97$$

**B1**

Evidence that 50 is broken down into 'blocks' of 18, 13, 8 etc ...

*Not  $50 \times 1$  or  $10 \times 5$*

**M1**

= 14.72

*2 lots of 18 plus 13 plus 1*

**A1**

**[3]**

**M13.** Attempt to find LCM of 12 and 21

or any common multiple of 12 and 21 eg, 252

*12, 24 ... and 21, 42 ... minimum*

*$12 \times 21$  is enough*

*Factors of 12 and 21 with attempt at LCM*

**M1**

84

*Allow 85*

*(those who assume they start after 1 sec)*

**A1**

**[2]**



**M14.** £60

*6000 6000 mins is B0*

**B1**

150 – 30

*150 × 0.1 – 30 is M0*

**M1**

Their 120 × 0.1

*1200*

**A1 ft**

26 and Contract

*2600 or cheaper by £34*

**A1**

**[4]**

**M15.** (a)  $72 \times \frac{5}{8}$   
*72 × 0.625, 72 ÷ 1.6*

**M1**

45

**A1**

(b) 3.5

*oe or 210*

**B1**

$\frac{200}{\text{their } 3.5}$

$\frac{200}{\text{their } 210} \times 60$

**M1**

57.1(4)

**A1**

Round their answer to 1dp or 0dp

*57 or 57.1, or 60 with working*

**B1 ft**

**[6]**

- M16.** Attempt to find LCM of 2, 5 and 8 **or**  
any common multiple of 2, 5 and 8, eg. 80, 120 ...  
or 1, 3, 5, 7, 9 ...  
**and** 1, 6, 11, 16, 21 ...  
**and** 1, 9, 17, 25, 33, 41 ...

M1

40

or 41

A1

[2]

- M17.**  $(300, 315, 316 \text{ or } 320) \times 4 \div 0.2$   
*2 approximations correct. If 316 used, must see 4 and 0.2*

M1

$(1200, 1260, 1264 \text{ or } 1280) \div 0.2$

M1

6000, 6300, 6320 or 6400

A1

[3]

- M18.** Using multiples  
*Using prime factors:  $30 = 2 \times 3 \times 5$ ;  
 $16 = 2^4$*

M1

30, 60, 90....., 240

16, 32, 48....., 240

*$LCM = 2^4 \times 3 \times 5 = 240$   
Sight of 240 scores M1A1*

A1

8 pack buns. 15 of sausages

*A pair of values giving equal numbers of buns and sausages score  
M1A1A0  
Correct answer with no working scores full marks*

A1

[3]

<b>M19.</b>	(a) 2 (and) 75 or 3 (and) 50 or 5 (and) 30	<i>Do not allow for a list of factors even in pairs</i>	M1	[5]
	2 (x) 3 (x) 5 (x) 5	<i>Condone factor of 1</i>	A1	
	$2 \times 3 \times 5^2$	<i>Must have x signs Do not allow factor of 1</i>	A1	
	(b) 3 (x) 5 (x) 5	<i>Selects all common factors from <math>3^2 \times 5^2</math> and their (a)</i>	M1	
	75	<i>SC1 Answer 15 or 25</i>	A1	
<b>M20.</b>	2 (x) 54 or 3 (x) 36	<i>Using 2 or 3 in valid method eg factor tree Do not award for a list of all factors even if in product pairs</i>	M1	[3]
	2 (x) 2 (x) 3 (x) 3 (x) 3	<i>Condone use of 1</i>	A1	
	$2^2 \times 3^3$	<i>Do not allow factor of 1</i>	A1	
<b>M21.</b>	11.6	11.568(1) B1	B2	[2]

