

**M1.**

(a) 28

B1

(b) 6

B1

[2]

**M2.**

850 × 1.18 or 1003

oe

 $(990 + 15) \div 1.18$ or  $990 \div 1.18$  or 838.9(...)

M1

1003 and 1005

or 2

851.(...) or 852

or 1.(...)

A1

Laura and 1003 and 1005

or Laura and 2

or UK and 1003 and 1005

or UK and 2

or Laura and 851.(...) or 852

or Laura and 1.(...)

or UK and 851.(...) or 852

or UK and 1.(...)

*Strand (iii) decision to match **their** calculation**ft **their** comparison of values with M1 scored, both values must be in the same currency*

Q1ft

**Additional Guidance**

Accept name, country or price (e.g. the (£)850 saddle) for final answer

 $990 \div 1.18 = 838.$ (...), Steve (or Holland)

M1A0Q1ft

 $990 \div 1.18 = 838.$ (...),  $15 \div 1.18 = 12.$ (...),  $838 + 12 = 850$ , they both cost the same

M1A0Q1ft

Laura with no valid working

For the Q mark, follow through *their* comparison of values with M1 scored, but both values must be in the same currency and one of the values used in the comparison must be from the M1 that was awarded.

M0A0Q0

[3]

**M3.3** and 7.5 seen

or 4 : 1 or 1 : 4 seen or implied

B1

$\pi \times 6 \times 15$  or  $90\pi$  or [282, 283]

or  $\pi \times 3 \times 7.5$  or  $22.5\pi$  or [70, 71]  
oe

M1

$\pi \times 6 \times 15 - \pi \times 3 \times 7.5$

or  $90\pi - 22.5\pi$

or  $\pi \times 6 \times 15 \times \frac{3}{4}$   
oe

M1dep

[211.8, 212.2] or  $67.5\pi$  or  $\frac{135}{2}\pi$   
*Ignore fw*

A1

[4]

**M4.**

$$\frac{16}{64} \text{ or } \frac{12}{40} \text{ or } 4 : 1 \text{ or } 4 : 1.2 \text{ or } 3.3 (3\dots) : 1$$

oe

M1

Comparing equivalents

0.25 and 0.3

or 25(%) and 30(%)

$$\text{or } \frac{10}{40} \text{ and } \frac{12}{40}$$

or 4 : 1 and 4:1.2

or 4 : 1 and 3.3(3...) : 1

with at least 1 correct

$$\text{oe Eg } \frac{80}{320} \text{ and } \frac{96}{320}$$

M1

Both correct **and** Wet track

A1

**[3]****M5.**

$$150 \div 6 \text{ or } 25 \text{ (1 person)}$$

$$150 \times 2 \text{ or } 300 \text{ (12 people)}$$

$$\text{or } \frac{150}{2}$$

$$\text{or } 75 \text{ (3 people)}$$

M1

their 25 × 15

their 300 + their 75

or

their 75 × 5

M1dep

375

A1

**Alternative method**

$15 \div 6$  or 2.5

M1

their  $2.5 \times 150$

M1dep

375

A1

[3]

**M6.(a)**  $300 \div 4$  or 75

or  $300 \times 1.5$

2 cakes =  $300 \div 2$  or 2 cakes = 150

or

12 cakes =  $300 \times 3$  or 12 cakes = 900

oe

*any correct scaling*

M1

450

A1

(b) (1.5 kg =) 1500 (g)

or 300 g = 0.3 kg or 150 g = 0.15 kg

*seen or implied*

B1

their  $1500 \div$  their 75

or 6 (+) 6 (+) 6 (+) 2

or  $5 \times 4$  or 4 (+) 4 (+) 4 (+) 4 (+) 4

oe

M1

20

SC2 14 cakes from 1050g

A1

**Alternative method**

(1.5 kg =) 1500 (g)

or 300 g = 0.3 kg or 150 g = 0.15 kg  
*seen or implied*

B1

Build up method to total number of cakes from their 1500 with one error

*build up values if correct:*

4 cakes = 300(g)

8 cakes = 600(g)

12 cakes = 900(g)

16 cakes = 1200(g)

M1

20

SC2 14 cakes from 1050g

A1

**Additional Guidance**

1500(g)

4 cakes = 300(g)

8 cakes = 600(g)

16 cakes = 900(g) (one error)

24 cakes = 1500(g)

Answer 24 cakes

is B1M1A0

1000(g) uses incorrect total of flour (misread)

4 cakes = 300(g)

8 cakes = 600(g)

12 cakes = 900(g)

Answer 12 cakes (one error – should be 13 cakes)

is B0M1A0

**[5]**

**M7.(a)** 600

**B1**

(b)  $900 - 860$  or  $860 + 40 = 900$  or 40

or

$0.9 - 0.86$  or  $0.86 + 0.04 = 0.9$  or 0.04

*Condone 860 - 900*

*oe*

*Condone incorrect or missing units*

**M1**

40 grams or 0.04 kg

*SC1 940 g or 0.94 kg*

**A1**

**Additional Guidance**

If you see  $860 + 40 = 900$  but then further work to build up to eg 1800, mark the whole method and the only mark available is the SC1.

Once 40 g or 0.04 kg seen, ignore any attempt to change units.

40 g seen in working but then 40 on ans line - condone. M1A1

**[3]**

**M8.**Any valid conversion seen, eg

10 (cm) = 4 (inches)

25 (cm) = 10 (inches)

30 (cm) = 12 (inches)

*Numbers may be marked next to graph*

**M1**

150 (cm) = 60 (inches)

or

75 (inches) = [185, 190] (cm)

or

$75 : 150 = 1 : 2$  and  $\text{inch} : \text{cm} = 1 : 2.5$

or

eg  $150 \div 30 = 5$  and  $75 \div 12 = 6.25$  (...)

*May use any value [60, 75] (inches) correctly converted to cm to show it is not enough*

*eg 70 inches = 175 cm*

**A1**

Correct conclusion with appropriate values stated

eg No and 60

or No and [185, 190]

or No and each inch needs 2.5 cm and there are only 2

oe

*Strand (iii) Allow Q1ft if M1A0 awarded, an arithmetic error made in calculating conversion of 150 cm or 75 inches and a correct conclusion reached for their values. Must be using correct conversions throughout*

**Q1ft**

### **Alternative method**

Divides 150 and 75 by a common factor of at least 5

eg  $150 \div 10 = 15$  and  $75 \div 10 = 7.5$

**M1**

Reads off accurately for one of their values eg  $15 \text{ cm} = 6 \text{ inches}$

or

Draws lines across and down accurately for both values

**A1**

Correct conclusion comparing their scaled value and graph value or comparing their pairs of lines

*Strand (iii) Allow Q1ft if M1A0 awarded, an error made in reading value and correct conclusion reached for their values*

**M1**

**Additional Guidance**

Note that the list for Q1 are only examples, there are many other possible valid conclusions

eg1 70 inches = 175 cm so 150 cm is not enough

eg2  $150 \div 30 = 5$  and  $75 \div 12 = 6$  (...) so No because need 6 times and only 5.

They must be using a correct conversion for all parts of their answer to qualify for the Q mark. Allow arithmetic errors only.

**[3]**

**M9.**  $\frac{42}{300}$  or  $\frac{33}{250}$  or  $\frac{48}{400}$

oe

$$\frac{258}{300} \text{ or } \frac{227}{250} \text{ or } \frac{352}{400}$$

$$300 \div 42 \text{ or } 250 \div 33 \text{ or } 400 \div 48$$

**M1**

0.14 and 0.13(2) and 0.12

or

0.86 and 0.868 or 0.87 and 0.88

*14 and 13.(2) and 12*

*86 and 86.8 or 87 and 88 (non-faulty)*

*7.1(428) and 7.5(757) or 7.6 and 8.(3333)*

**A1**

0.14 or A or 0.86

*Strand (iii)*

*Correct conclusion from their three answers with at least one correct*

**Q1ft****Alternative Method**

Correct scaling for one pair

eg

*840 and 792 (out of 6000) A and B*

*7 and 6.6 (out of 50) A and B*

**M1**



All three scaled for comparison

eg  
 840 and 792 and 720 A, B and C  
 7 and 6.6 and 6 A, B and C  
 792 and 720 with 7 and 6.6 (B and C with A and B)

A1

A oe

Strand (iii)  
 Correct conclusion from their three answers  
 with at least one (pair) correct

Q1ft

[3]

**M10.(a)**  $5.99 \div 8$  or  $599 \div 8$

Condone  $6 \div 8$  or  $600 \div 8$

M1

74.875 (p) or 74 (p) or 75 (p)

Accept £ 0.74 or £ 0.75 or £ 0.74875

Allow any correct rounding or truncation giving an answer to 2 or more s.f.

A1

(b)  $3.99 \div 6$

or  $399 \div 6$  oe

Scaling method used with £ 6

or  $\frac{6}{8} \times 5.99$

eg 8 cost £ 6, 4 cost £ 3, 2 cost £ 1.50 6 cost £ 4.50

or  $6 \times$  their 75

£3.99 + their £1.50

£5.99 – their £1.50

or  $6 \times$  their 0.75

M1

(£) 0.665 or 66(.5) (p) or 67 (p)  
*6 pack is better value*

or 4.4925 or 450p or £4.50  
*7p, 8p or 9p cheaper per battery*

and better value (Yes)  
*£5.49 or £4.49*  
*Comparison must be with consistent units*  
*ft their (a)*

A1ft

**Alternative method**

$8 \div 5.99$  or  $8 \div 599$   
*May be seen in (a)*

and  $6 \div 3.99$  or  $6 \div 399$   
*6 costs £2 less (so extras are £1 each)*  
*Compares cost of 24 batteries*  
*£5.99  $\times$  3 and £3.99  $\times$  4*

M1

1.3(3) and 1.5(0)  
*£1 compared with 75p*

and 6 batteries better value (Yes)  
*£17.97 and £15.96*  
*and 6 batteries better value*

A1ft

[4]

**M11.**

$112 \div 210$   
 $112 \div 210 \times 100$

M1

$132 \div 240$   
 $132 \div 240 \times 100$

M1

0.53.... **and** 0.55  
*53... (%) **and** 55(%)*

A1

Their 0.53.... **and** their 0.55 **and** Year 11

*Their 53....(%) **and** their 55(%) **and** Year 11*

*Strand (iii)*

*M2 and correct decision for their decimals or percentages*

Q1

**Alternative 1**

$$210 \div 112$$

$$210 \div 112 \times 100$$

M1

$$240 \div 132$$

$$240 \div 132 \times 100$$

M1

1.875 **and** 1.8(18...)

*187.5(%) **and** 181.8...(%)*

A1

Their 1.875 **and** their 1.8(18...) **and** Year 11

*Their 187.5(%) **and** their 181.8...(%) **and** Year 11*

*Strand (iii)*

*M2 and correct decision for their decimals or percentages*

Q1

**Alternative 2**

$$(210 - 112) \div 210$$

$$(210 - 112) \div 210 \times 100$$

M1

$$(240 - 132) \div 240$$

$$(240 - 132) \div 240 \times 100$$

M1

0.46.....(or 0.47) **and** 0.45

*46....(%) (or 47(%) **and** 45(%)*

A1

Their 0.46.....(or 0.47) **and** their 0.45 **and** Year 11

*Their 46....(%) (or 47(%) **and** their 45(%) **and** Year 11*

*Strand (iii)*

*M2 and correct decision for their decimals or percentages*

Q1

**Alternative 3**

$$210 \div (210 - 112)$$

$$210 \div (210 - 112) \times 100$$

M1

$$240 \div (240 - 132)$$

$$240 \div (240 - 132) \times 100$$

M1

2.1(4...) **and** 2.2(2...)21.4...(%) **and** 22.2...(%)

A1

Their 2.1(4...) **and** their 2.2(2...) **and** Year 11*Their 214.(...) (%) **and** their 222.(...) (%) **and** Year 11**Strand (iii)**M2 and correct decision for their decimals or percentages*

Q1

**Alternative 4**

$$\frac{112}{210} \text{ and } \frac{132}{240}$$

M1

Equates denominators with at least one correct numerator

M1

$$\frac{32}{60} \text{ and } \frac{33}{60}$$

$$\text{oe } \frac{16}{30} \text{ and } \frac{16.5}{30}$$

A1

Their  $\frac{210}{112}$  **and** their  $\frac{240}{132}$  **and** Year 11

oe

*Strand (iii)**M2 and correct decision for their fractions*

Q1

**Alternative 5**112 : 210 **and** 132 : 240

M1

Equates one side of ratio with at least one correct on other side

$$1 : \frac{210}{112} \text{ and } 1 : \frac{240}{132}$$

$$\frac{112}{210} : 1 \text{ and } \frac{132}{240} : 1 \text{ oe}$$

M1

16 : 30 **and** 16.5 : 30

oe

A1

Their 16 : 30 **and** their 16.5 : 30 **and** Year 11

*Strand (iii)*

*M2 and correct decision for their ratios*

Q1

**Alternative 6**

112 : (210 – 112)

**and** 132 : (240 – 132)

M1

8 : 7 **and** 11 : 9

M1

72 : 63 **and** 77 : 63

oe

A1

Their 72 : 63 **and** their 77 : 63 **and** Year 11

*Strand (iii)*

*M2 and correct decision for their ratios*

Q1

**Alternative 7**

210 : (210 – 112) **and**

240 : (240 – 132)

M1

15 : 7 **and** 20 : 9

M1

135 : 63 **and** 140 : 63

oe

A1

Their 135 : 63 **and** their 140 : 63 **and** Year 11

*Strand (iii)*

*M2 and correct decision for their ratios*

Q1

[4]

M12.

$$\frac{20}{40} \times 60 \quad (= 30) \text{ or}$$

$$\frac{20}{40} \times 120 \quad (= 60) \text{ or}$$

$$\frac{20}{40} \times 180 \quad (= 90)$$

oe eg 1  $60 \div 2$

eg 2  $60 \div 40 \quad (= 1.5)$  **and** their  $1.5 \times 20$

M1

$$\frac{15}{20} \times 60 \quad (= 45) \text{ or}$$

$$\frac{15}{20} \times 120 \quad (= 90) \text{ or}$$

$$\frac{15}{20} \times 180 \quad (= 135)$$

oe eg 1  $180 \div 4 \times 3$

eg 2  $60 \div 20 \quad (= 3)$  **and** their  $3 \times 15$

M1

their 30 + their 45

**or**

their 60 + their 90

**or**

their 90 + their 135

*dep on at least one M1*

M1dep

(Sugar) 75

(Butter) 150

(Flour) 225

*All 3 correct*

*SC2 No working with two correct answers*

*SC1 No working with one correct answer*

A1

**Alternative**

$$\frac{20}{40} \quad \text{and} \quad \frac{15}{20}$$

oe eg 0.5 **and** 0.75

M1

their  $\frac{20}{40}$  + their  $\frac{15}{20}$  (=  $\frac{5}{4}$ )

oe eg 1.25

M1

their  $\frac{5}{4}$  x 60 (= 75) or

their  $\frac{5}{4}$  x 120 (= 150) or

their  $\frac{5}{4}$  x 180 (= 225)

oe eg 1.25 x 60

M1dep

(Sugar) 75  
(Butter) 150  
(Flour) 225

All 3 correct

SC2 No working with two correct answers

SC1 No working with one correct answer

A1

[4]

M13. eg  $4 \times \frac{1}{4}(i) = 1(i)$

oe  $20 \div 4$  or 5 or  $\frac{1}{5}$

M1

$4 \times 4$  or 16

oe their  $5 \times \frac{1}{4}$

M1

No and 16

oe eg No and  $1\frac{1}{4}$

A1

[3]

**M14.** Attempts to process one piece of information

*eg 2 : 9 or 4 : 16*

*0.22... or 0.25*

$$\frac{6}{27} = \frac{2}{9} \quad \text{or} \quad \frac{8}{32} = \frac{4}{16}$$

$$\frac{6}{27} \times 100 \quad \text{or} \quad \frac{8}{32} \times 100$$

$$\frac{24}{108} \quad \text{or} \quad \frac{24}{96} \quad \frac{192}{864} \quad \text{or} \quad \frac{216}{864}$$

*or 8 goals in 32 games is 1 goal every 4 games*

$$4\frac{1}{2} \quad \text{or} \quad 4$$

*oe*

**M1**

Writes both pieces of information in a form that allows for comparison

*eg 2 : 9 and 2 : 8*

*0.22 ... and 0.25*

*(1 : 4.5 and 1 : 4 are acceptable)*

$$4\frac{1}{2} \quad \text{and} \quad 4$$

$$\frac{2}{9} \quad \text{and} \quad \frac{2}{8} \quad \frac{24}{108} \quad \text{and} \quad \frac{24}{96}$$

$$\frac{8}{36} \quad \text{and} \quad \frac{9}{36} \quad \frac{192}{864} \quad \text{and} \quad \frac{216}{864}$$

*oe*

**A1**

Correct decision from their working

*Strand (iii) Dependent on M1*

**Q1**

**[3]**



**M15.** 600 and 50 and 200

*B2 for any two of 600, 50, 200*

*B1 for any one of 600, 50, 200*

or for sight of  $\frac{2}{3}$  or  $\frac{3}{2}$  oe,

or for sight of 2:3 or 3:2 oe

Accept 66%, 67%, 150%

*If no correct values seen,*

*B1 for any correct proportion*

eg Potatoes = 3 x stock

Potatoes = 12 x carrots

Stock = 4 x carrots

**B3**

**[3]**

**M16.2**

*B2 for 3 or 4 correct*

6

*B1 for 1 or 2 correct*

1

150

*SC2 4, 12, 2, 300, 20*

10

*SC1 3 or 4 correct of 4, 12, 2, 300, 20*

**B3**

**[3]**

M17.(a)  $64 \times 2$  or  $0.64 \times 2$  oe

M1

1.28

A1

(b)  $64 \times 3$  oe

or  $1.99 \div 3 (\times 2)$

*Attempt to compare equal quantities*

or  $64 \times 6$  and  $1.99 \times 2$

M1

(£) 1.92

*Correct values for their comparison*

or (£) 0.66 (...) or (£) 1.32 or (£) 1.33

or (£) 3.84 and (£) 3.98

A1

Small

*Strand (iii)*

*Correct conclusion for their values*

*Must compare equal quantities*

Q1 ft

[5]