

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

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

M1A0Q1ft

 $990 \div 1.18 = 838.(\dots)$, $15 \div 1.18 = 12.(\dots)$, $838 + 12 = 850$, 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 90π or [282, 283]

or $\pi \times 3 \times 7.5$ or 22.5π 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 67.5π or $\frac{135}{2}\pi$
Ignore fw

A1

[4]

M4.

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

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 2.5×150

M1dep

375

A1

[3]

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

or 300×1.5

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

or

12 cakes = 300×3 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 5×4 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 x their 75

£3.99 + their £1.50

£5.99 – their £1.50

or 6 x 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 11Their 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 5112 : 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 1.5×20

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 3×15

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

4×4 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) 64×2 or 0.64×2 oe

M1

1.28

A1

(b) 64×3 oe

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

Attempt to compare equal quantities

or 64×6 and 1.99×2

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]