Set A — Answers

Set A Paper 1

1 315 — **1 mark**
Topic tested: ADDITION

2 32 — **1 mark**
Topic tested: MULTIPLICATION

3 1612 — **1 mark**
Topic tested: SUBTRACTION

4 6 — **1 mark**
Topic tested: DIVISION

5
$$\begin{array}{r} 2\,6\,5\,8 \\ +\quad 7\,1\,8 \\ \hline 3\,3\,7\,6 \end{array}$$
1 mark
Topic tested: WRITTEN ADDITION

6 28.7 — **1 mark**
Topic tested: ADDITION

7 $\frac{1}{7}+\frac{3}{7}=\frac{1+3}{7}=\mathbf{\frac{4}{7}}$ — **1 mark**
Topic tested: ADDING AND SUBTRACTING FRACTIONS

8 -5 — **1 mark**
Topic tested: NEGATIVE NUMBERS

9 $7 \times 3 \times 4 = 7 \times 12 = \mathbf{84}$ — **1 mark**
Topic tested: MULTIPLICATION

10
$$\begin{array}{r} {}^{3}\not{4}\,{}^{1}0 \\ -\,3\,7\,0 \\ \hline 1\,7\,0 \end{array}$$
1 mark
Topic tested: SUBTRACTION

11 $\frac{17}{19}-\frac{12}{19}=\frac{17-12}{19}=\mathbf{\frac{5}{19}}$ — **1 mark**
Topic tested: ADDING AND SUBTRACTING FRACTIONS

12 0.482 — **1 mark**
Topic tested: DIVIDING BY 10, 100 AND 1000

13 $4 \times 7 = 28$
So $40 \times 70 = 28 \times 100 = \mathbf{2800}$ — **1 mark**
Topic tested: MULTIPLICATION

14 121 — **1 mark**
Topic tested: SQUARE AND CUBE NUMBERS

15
$$\begin{array}{r} 4\,2\,7 \\ \times\quad\quad 6 \\ \hline 2\,5\,6\,2 \end{array}$$
1 mark
Topic tested: WRITTEN MULTIPLICATION

16 $42 \div 6 = 7$
So $42\,000 \div 6 = 7 \times 1000 = \mathbf{7000}$ — **1 mark**
Topic tested: DIVISION

17 $7 \times 9 = 63$
So $0.7 \times 9 = 63 \div 10 = \mathbf{6.3}$ — **1 mark**
Topic tested: MULTIPLICATION

18 10% of 250 = 250 ÷ 10 = 25
40% of 250 = 4 × 25 = **100** — **1 mark**
Topic tested: PERCENTAGE PROBLEMS

19 $\frac{3}{4} \times 120 = \frac{3 \times 120}{4} = \frac{360}{4} = \mathbf{90}$ — **1 mark**
Topic tested: MULTIPLYING FRACTIONS

20
$$\begin{array}{r} 3\,3.4\,5 \\ +\quad 6.7\,0 \\ \hline 4\,0.1\,5 \end{array}$$
1 mark
Topic tested: WRITTEN ADDITION

21
$$\begin{array}{r} 2\,8\,4\,5 \\ \times\quad\quad 5 \\ \hline 1\,4\,2\,2\,5 \end{array}$$
1 mark
Topic tested: WRITTEN MULTIPLICATION

22
$$\begin{array}{r} 7\,7\,{}^{3}\not{4}\,{}^{1}\not{2}\,{}^{1}3 \\ -\quad 6\,3\,7\,5 \\ \hline 7\,1\,0\,4\,8 \end{array}$$
1 mark
Topic tested: WRITTEN SUBTRACTION

23 $\frac{3}{23} \times 4 = \frac{3 \times 4}{23} = \mathbf{\frac{12}{23}}$ — **1 mark**
Topic tested: MULTIPLYING FRACTIONS

24
$$\begin{array}{r} 5\,3\,7 \\ \times\quad\quad 4 \\ \hline 2\,1\,4\,8 \end{array}$$
So $5.37 \times 4 = 2148 \div 100 = \mathbf{21.48}$ — **1 mark**
Topic tested: WRITTEN MULTIPLICATION

25
$$\begin{array}{r} {}^{5}\not{6}\,{}^{1}\not{3}\,{}^{1}\not{4}\,{}^{1}2 \\ -\,1\,4.5\,5 \\ \hline 4\,8.8\,7 \end{array}$$
1 mark
Topic tested: WRITTEN SUBTRACTION

26
$$\begin{array}{r} \quad 4\,6\,8 \\ 9\overline{)\,4\,2\,{}^{6}1\,{}^{2}2} \end{array}$$
So $42.12 \div 9 = 468 \div 100 = \mathbf{4.68}$ — **1 mark**
Topic tested: WRITTEN DIVISION

27
$$\begin{array}{r} 4\,9\,3 \\ \times\quad 2\,4 \\ \hline 1\,9\,7\,2 \\ 9\,8\,6\,0 \\ \hline 1\,1\,8\,3\,2 \end{array}$$
(2 marks for the correct answer, otherwise 1 mark for the correct method with no more than one error. Award no marks if the error is the placing of digits in incorrect columns.) — **2 marks**
Topic tested: WRITTEN MULTIPLICATION

28 10% of 120 = 120 ÷ 10 = 12
30% of 120 = 3 × 12 = 36
5% of 120 = 12 ÷ 2 = 6
35% of 120 = 36 + 6 = **42** — **1 mark**
Topic tested: PERCENTAGE PROBLEMS

29
$$\begin{array}{r} \quad 3\,2\,4 \\ 16\overline{)\,5\,1\,8\,4} \\ -\,4\,8 \\ \hline \quad 3\,8 \\ -\,3\,2 \\ \hline \quad\quad 6\,4 \\ -\,6\,4 \\ \hline \quad\quad\ 0 \end{array}$$
(2 marks for the correct answer, otherwise 1 mark for a correct method with no more than one error.) — **2 marks**
Topic tested: WRITTEN DIVISION

30 $\frac{3}{7} \times \frac{4}{5} = \frac{3 \times 4}{7 \times 5} = \mathbf{\frac{12}{35}}$ — **1 mark**
Topic tested: MULTIPLYING FRACTIONS

© CGP 2015

Set A — Answers

31 $1\frac{2}{7} + \frac{5}{14} = \frac{9}{7} + \frac{5}{14} = \frac{18}{14} + \frac{5}{14} = \frac{18+5}{14} = \frac{23}{14}$ or $1\frac{9}{14}$ — **1 mark**

Topic tested: ADDING AND SUBTRACTING FRACTIONS

32

$$\begin{array}{r} 2641 \\ \times \quad 35 \\ \hline 13205 \\ 79230 \\ \hline 92435 \end{array}$$

(2 marks for the correct answer, otherwise 1 mark for the correct method with no more than one error. Award no marks if the error is the placing of digits in incorrect columns.) — **2 marks**

Topic tested: WRITTEN MULTIPLICATION

33 $(38 + 12) \div 5 - 3 = 50 \div 5 - 3 = 10 - 3 = 7$ — **1 mark**

Topic tested: ORDER OF OPERATIONS

34 $\frac{5}{12} - \frac{2}{9} = \frac{15}{36} - \frac{8}{36} = \frac{15-8}{36} = \frac{7}{36}$ — **1 mark**

Topic tested: ADDING AND SUBTRACTING FRACTIONS

35 $\frac{7}{36} \div 2 = \frac{7}{36 \times 2} = \frac{7}{72}$ — **1 mark**

Topic tested: DIVIDING FRACTIONS

36

$$\begin{array}{r} 57 \\ 27\overline{)1539} \\ -135 \\ \hline 189 \\ -189 \\ \hline 0 \end{array}$$

(2 marks for the correct answer, otherwise 1 mark for a correct method with no more than one error.) — **2 marks**

Topic tested: WRITTEN DIVISION

Set A Paper 2

1 11.7 cm — **1 mark**

Topic tested: UNITS

2a $3 \times 8 = 24$ or $4 \times 8 = 32$ — **1 mark**
2b $3 \times 4 = 12$ or $4 \times 3 = 12$ — **1 mark**

Topic tested: MULTIPLICATION

3a 13 — **1 mark**
3b Art Club — **1 mark**
3c $14 - 9 = 5$ — **1 mark**

Topic tested: TABLES

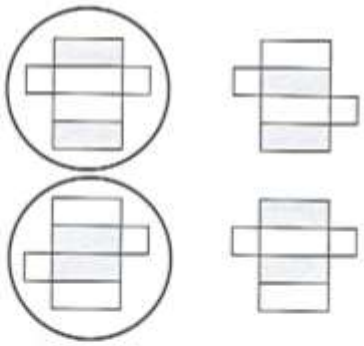
4 5.26, 5.6, 6.24, 6.3, 6.42 — **1 mark**

Topic tested: DECIMALS

5a Circumference — **1 mark**
5b $12 \times 2 = 24$ cm — **1 mark**

Topic tested: 2D SHAPES

6



1 mark

Topic tested: SHAPE NETS

7a 7 °C – -2 °C = 9 °C — **1 mark**
7b -2 °C – 3 °C = -5 °C — **1 mark**

Topic tested: NEGATIVE NUMBERS

8 1, 3, 5, 15 — **1 mark**

Topic tested: FACTORS

9 $8 = 2 \times 4$, so $5 \times 4 = 20$ — **1 mark**

Topic tested: RATIO AND PROPORTION

10 A rectangle of 6 units × 2 units OR 12 units × 1 unit. — **1 mark**

Topics tested: PERIMETERS & AREAS

11a £0.50 × 3 + £3 = £4.50 — **1 mark**
11b £5.50 – £3 = £2.50
£2.50 ÷ £0.50 = 5
(2 marks for correct answer, otherwise 1 mark for a correct method.) — **2 marks**

Topic tested: FORMULAE AND EXPRESSIONS

12 $\frac{2}{5}$, 40%, 0.4 — **1 mark**

$\left(\frac{2}{5} = \frac{40}{100} = 40\%, 0.4 = \frac{4}{10} = \frac{40}{100} = 40\%\right)$

Topic tested: FRACTIONS, DECIMALS AND PERCENTAGES

13a 23 — **1 mark**
13b E.g. 16 = 2 × 8, so to find 368 ÷ 16, divide 368 ÷ 8 = 46 by 2. — **1 mark**

Topic tested: DIVISION

© CGP 2015

Set A — Answers

14 Amy is $\frac{4}{5} \times 10 = \frac{40}{5} = 8$ years old

$$\begin{array}{r} 4\,2\,5 \\ \times \quad 8 \\ \hline 3\,4\,0\,0 \\ {\scriptstyle 2\ 4\ \ \ \ } \end{array}$$

So Tim's mum is $4.25 \times 8 = 3400 \div 100 =$ **34** years old — **2 marks**
(2 marks for correct answer, otherwise 1 mark for a correct method.)
Topics tested: MULTIPLYING FRACTIONS & WRITTEN MULTIPLICATION

15a $27 \div 5 = 5$ r 2
So $\frac{27}{5} = 5\frac{2}{5}$ — **1 mark**

15b $2\frac{4}{9} = \frac{2 \times 9}{9} + \frac{4}{9} = \frac{18 + 4}{9} = \frac{\mathbf{22}}{\mathbf{9}}$ — **1 mark**
Topic tested: MIXED NUMBERS AND IMPROPER FRACTIONS

16 1976 — **1 mark**
Topic tested: ROMAN NUMERALS

17a $4 \times 12 =$ **48 mm²** — **1 mark**

17b Base of triangle $= 7 - 4 = 3$ mm
Area $= 0.5 \times 3 \times 12 =$ **18 mm²** — **1 mark**
Topic tested: AREAS

18a $\frac{1}{8}$ — **1 mark**

18b Sunday
E.g. She saw $24 \div 4 = 6$ blackbirds on Sunday. Fewer than half the birds she saw on Saturday were blackbirds, so she saw fewer than $12 \div 2 = 6$ blackbirds on Saturday. — **1 mark**
Topic tested: PIE CHARTS

19 A = (6, 11)
B = (6 + 5, 11 − 4) = **(11, 7)** — **2 marks**
(2 marks for correct answer, otherwise 1 mark for finding A.)
Topics tested: COORDINATES & TRANSLATION

20 Total membership fees $= 10 \times £12 = £120$
Cost of $4 \times 10 = 40$ balls $= 2 \times £19.78$

$$= \begin{array}{r} 1\,9\,.\,7\,8 \\ \times \quad\quad 2 \\ \hline 3\,9\,.\,5\,6 \\ {\scriptstyle 1\ 1\ \ 1\ \ } \end{array}$$

Cost of 10 T-shirts $= £4.99 \times 10 = £49.90$

$$\text{Total cost of balls and T-shirts} = + \begin{array}{r} £3\,9\,.\,5\,6 \\ £4\,9\,.\,9\,0 \\ \hline £8\,9\,.\,4\,6 \\ {\scriptstyle \ \ 1\ 1\ \ } \end{array}$$

$$\text{Money left over} = \begin{array}{r} £1\,2\,\cancel{0}\,\cancel{0}\,\cancel{.}\,\cancel{0}\,0 \\ - \quad £8\,9\,.\,4\,6 \\ \hline \mathbf{£30.54} \end{array}$$

(3 marks for correct answer, otherwise 2 marks for a correct method with one error or for correctly finding the total cost of all the items. Award 1 mark for correctly finding the cost of 40 balls and the cost of 10 T-Shirts.) — **3 marks**
Topic tested: CALCULATIONS WITH MONEY

Set A Paper 3

1 301, 354, 474, 778, 1026, 1103 — **1 mark**
Topic tested: ORDERING NUMBERS

2a **A** and **C** — **1 mark**
2b **A** and **B** — **1 mark**
Topic tested: 2D SHAPES

3a $12 \times 4 =$ **48** — **1 mark**
3b There are $3 + 4 + 1 = 8$ balloons in a packet.
So he needs $24 \div 8 =$ **3** packets — **1 mark**
Topics tested: MULTIPLICATION & DIVISION

4 $\frac{4}{5}$ — **1 mark**
Topic tested: FRACTIONS

5 1.4 kg = 1400 g
1400 g − 550 g = **850 g** — **2 marks**
(2 marks for correct answer, otherwise 1 mark for correctly reading 550 g from the scale.)
Topics tested: UNITS & SUBTRACTION

6

Eight million, eight hundred and eight thousand, eight hundred	8 080 808
Eight million, eighty thousand, eight hundred and eight	8 808 800
Eight million, eight thousand, eight hundred and eighty	8 008 880

— **1 mark**
Topic tested: NUMBERS

7a 12 cm³ — **1 mark**
7b $12 \times 3 =$ **36 cm³** — **1 mark**
Topic tested: VOLUME

8 He eats $21 \div 7 = 3$ apples each day.

$$\begin{array}{r} 3\,6\,5 \\ \times \quad 3 \\ \hline 1\,0\,9\,5 \\ {\scriptstyle 1\ 1\ 1\ \ } \end{array}$$

So he eats **1095** apples in 365 days. — **2 marks**
(2 marks for correct answer, otherwise 1 mark for a correct method with one error.)
Topic tested: WRITTEN MULTIPLICATION

9a 2 — **1 mark**
9b 36° — **1 mark**
Topic tested: ANGLES

10a 168 — **1 mark**
10b 4.58, 4.62, 4.64, 4.55 — **1 mark**
Topic tested: ROUNDING

11 3 pens cost $3 \times 32p = 96p$

$$\text{Total cost} = \begin{array}{r} £5.7\,5 \\ + \quad £0.9\,6 \\ \hline £6.7\,1 \\ {\scriptstyle \ \ 1\ 1\ \ } \end{array}$$

$$\text{Change from £10} = \begin{array}{r} £\,1\,\cancel{0}\,\cancel{.}\,\cancel{0}\,0 \\ - \quad £6.7\,1 \\ \hline \mathbf{£3.29} \end{array}$$

— **2 marks**
(2 marks for correct answer, otherwise 1 mark for a correct method with one error.)
Topic tested: CALCULATIONS WITH MONEY

12 j = **32°** (vertically opposite angles are equal) — **1 mark**
Topic tested: ANGLE RULES

13a 1056 (or 10.56 am) — **1 mark**
13b 15 minutes — **1 mark**
13c 1022 (or 10.22 am) — **1 mark**
Topic tested: TIMETABLES

© CGP 2015

Set A — Answers

14a 36 — **1 mark**

14b 2 squared + **4** squared = 20 — **1 mark**
(since $2^2 = 4$ and $4^2 = 16$)
Topic tested: SQUARE NUMBERS

15 $4 \div 2 = \mathbf{2}$ — **1 mark**
Topic tested: SIMILAR SHAPES

16a $\mathbf{\frac{2}{3}}$ $\left(\frac{4}{5} \times \frac{2}{3} = \frac{4 \times 2}{5 \times 3} = \frac{8}{15}\right)$ — **1 mark**

16b $\frac{1}{9} + \frac{1}{3} + ? = \frac{11}{18}$ can be written as:
$\frac{2}{18} + \frac{6}{18} + ? = \frac{11}{18}$
$? = \frac{3}{18} = \mathbf{\frac{1}{6}}$ — **1 mark**
Topic tested: MULTIPLYING FRACTIONS & ADDING AND SUBTRACTING FRACTIONS

17 False. 12 is a common multiple of 4 and 6. — **1 mark**
Topic tested: MULTIPLES

18 A = 3R — **1 mark**
Topic tested: FORMULAE AND EXPRESSIONS

19a
$$\begin{array}{r} 6\ 2 \\ 7\overline{)4\ 3\ 4} \end{array}$$
She ate **62 g**. — **1 mark**

19b $1 - \frac{1}{9} = \frac{8}{9}$
$\frac{8}{9} \div 3 = \frac{8}{9 \times 3} = \mathbf{\frac{8}{27}}$ — **2 marks**
(2 marks for correct answer, otherwise 1 mark for a correct method with one error.)
Topics tested: ADDING AND SUBTRACTING FRACTIONS & DIVIDING FRACTIONS

20 You need two bottles for each litre, so

1 litre of paint costs
$$\begin{array}{r} £2.67 \\ \times \quad 2 \\ \hline £\underset{1}{5}.\underset{1}{3}4 \end{array}$$

4 litres costs
$$\begin{array}{r} £5.34 \\ \times \quad 4 \\ \hline £\mathbf{2}\underset{1}{\mathbf{1}}.\underset{1}{\mathbf{3}}\mathbf{6} \end{array}$$

Or
4 litres = 4000 ml
So they used 4000 ÷ 500 = 40 ÷ 5 = 8 bottles.
$$\begin{array}{r} £2.67 \\ \times \quad 8 \\ \hline £\mathbf{2}\underset{5}{\mathbf{1}}.\underset{5}{\mathbf{3}}\mathbf{6} \end{array}$$
— **2 marks**
(2 marks for correct answer, otherwise 1 mark for a correct method with one error.)
Topic tested: WRITTEN MULTIPLICATION

© CGP 2015