



Testbase Fractions

L5

Name: _____

Class: _____

Date: _____

Time: **71 minutes**

Marks: **70 marks**

Comments:

1 $\frac{7}{8}$ of 64 =

1 mark

2 $1\frac{1}{4} \times 4 =$

1 mark

3 $\frac{3}{5} = \frac{18}{?}$

1 mark

4 $\frac{1}{7}$ of 602 =

1 mark

5 $\frac{1}{6} \times \frac{1}{2} =$

1 mark

6 $\frac{5}{6} \times 24 =$

1 mark

7 $\frac{1}{8} + \frac{3}{4} =$

1 mark

8 $\frac{4}{5} = \frac{?}{100}$

1 mark

9 $\frac{5}{6}$ of 72 =

1 mark

10 $\frac{1}{4} \times \frac{1}{2} =$

1 mark

11 $3\frac{1}{3} + 1\frac{2}{9} =$

1 mark

12 $\frac{5}{6} = \frac{20}{?}$

1 mark

13 $1\frac{1}{3} \times 2 =$

1 mark

14 $\frac{4}{5}$ of 450 =

1 mark

15 $\frac{1}{5} \times \frac{1}{3} =$

1 mark

16 $\frac{5}{8} \times 40 =$

1 mark

17 $\frac{4}{5} \div 2 =$

1 mark

18 $\frac{4}{5} - \frac{7}{10} =$

1 mark

19 $\frac{1}{9}$ of 549 =

1 mark

20 $\frac{2}{5} = \frac{12}{?}$

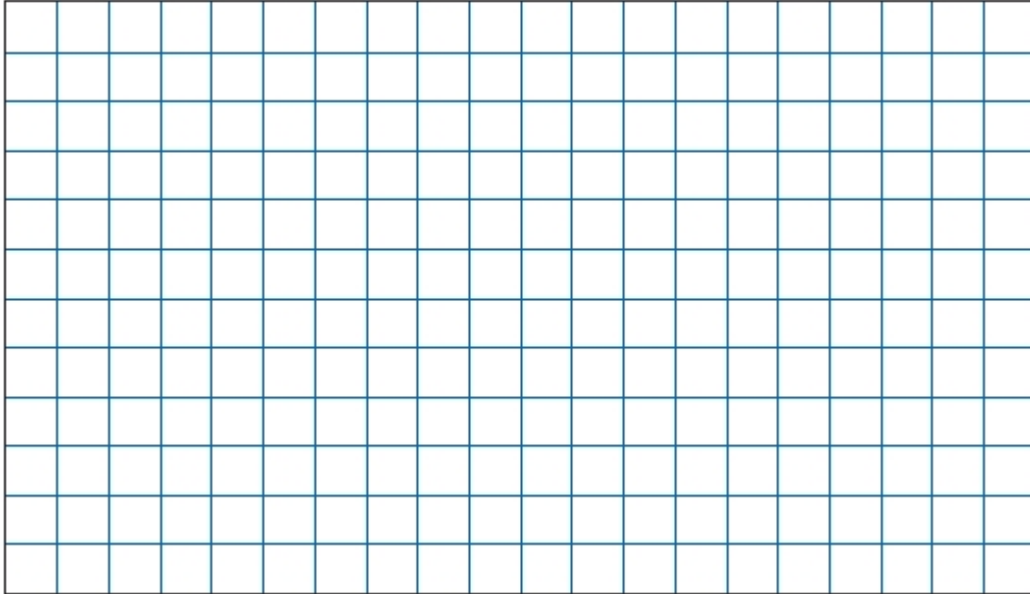
1 mark

25

Write the missing fraction.



$$\frac{1}{3} + \frac{1}{4} + \boxed{} = 1$$



1 mark

26

Write in the missing numbers.

One is done for you.

$$0.321 = \frac{\boxed{321}}{1000}$$

$$2.433 = \frac{\boxed{}}{1000}$$

$$\boxed{} = \frac{457}{1000}$$

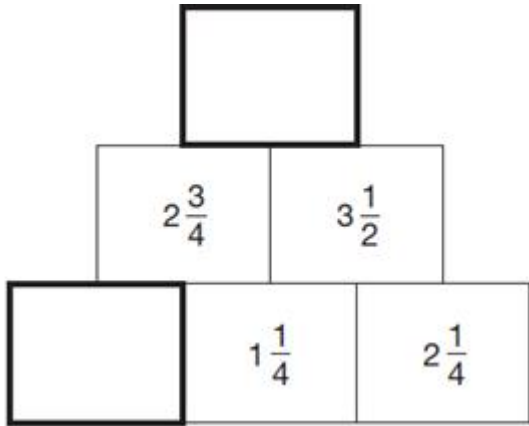
$$\boxed{} = \frac{23}{1000}$$

2 marks

30

In this diagram, the number in each box is the **sum** of the two numbers below it.

Write the missing numbers.



2 marks

31

Amy did a survey of what time people get up on a Sunday morning. This table shows her results for 150 people.

Time	number of people
before 7am	13
7:00 am to 7:59 am	28
8:00 am to 8:59 am	59
9:00 am to 9:59 am	36
10 am and after	14

Look at the table.

How many people get up at **8am or later**?



1 mark

Amy says,

'Two-thirds of the 150 people in the survey get up before 9am.'

Amy is correct.

Explain how you know.



1 mark

32

Write these in order of size, starting with the smallest.

$$\frac{2}{3}$$

0.5

$$\frac{3}{5}$$

0.65



--	--	--	--

smallest

1 mark

33

Write these in order of size, starting with the smallest.

$$\frac{3}{4}$$

0.34

0.7

43%



--	--	--	--

smallest

1 mark

34

In a class, 18 of the children are girls.

A quarter of the children in the class are boys.

Altogether, how many children are there in the class?



Show your method

A large grid for showing the method. A small empty box is provided for the final answer.

2 marks

35

Circle the fraction that is greater than $\frac{1}{2}$ but less than $\frac{3}{4}$



$\frac{7}{8}$

$\frac{2}{5}$

$\frac{1}{3}$

$\frac{5}{8}$

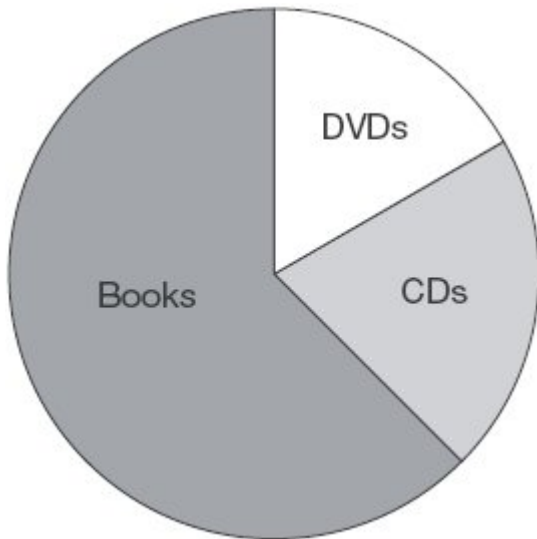
$\frac{3}{6}$

1 mark

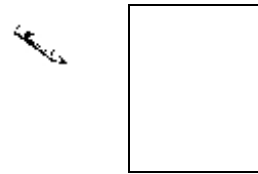
36

A shop sells books, CDs and DVDs.

This pie chart shows the sales of each in one week.



Estimate the **fraction** of the total sales that were DVDs.



1 mark

In this week, 200 **CDs** were sold.

Estimate how many books were sold.



1 mark

37

Two of the fractions below are **equivalent**.

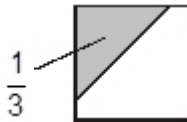
Circle them.

$\frac{2}{3}$ $\frac{6}{10}$ $\frac{9}{12}$ $\frac{10}{15}$ $\frac{16}{20}$

1 mark

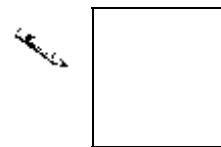
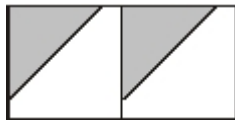
38

$\frac{1}{3}$ of this square is shaded.



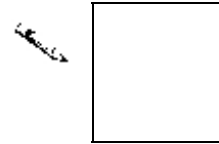
The same square is used in the diagrams below.

What fraction of this diagram is shaded?



1 mark

What fraction of this diagram is shaded?



1 mark

39

Ben thinks of a number.

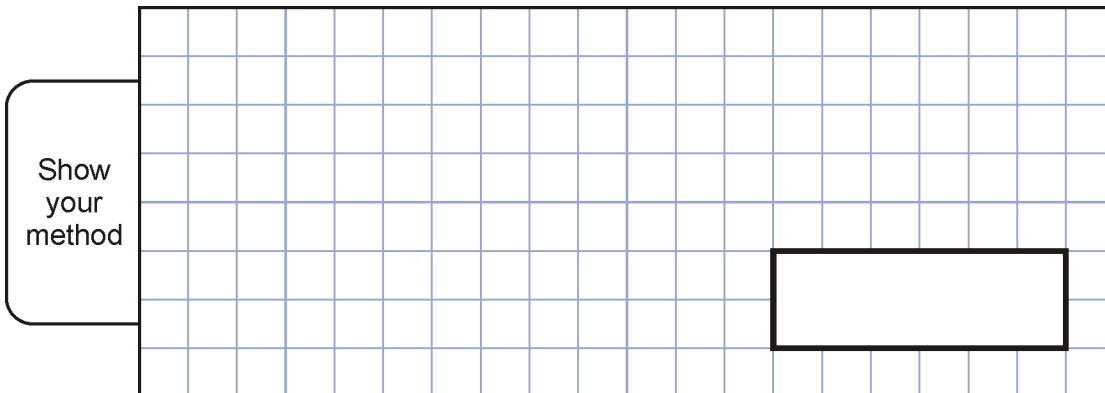


He adds half of the number to a quarter of the number.

The result is 60

What was the number Ben first thought of?

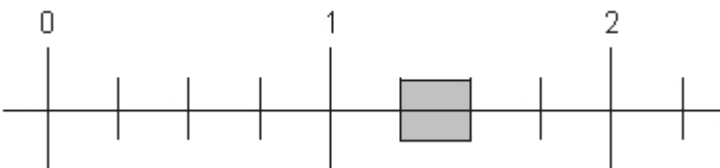
Show your method



2 marks

40

Part of this number line is shaded.



Circle **all** the numbers below that belong in the shaded part of the number line.

Handwritten mark

1.1

1.4

$1\frac{1}{3}$

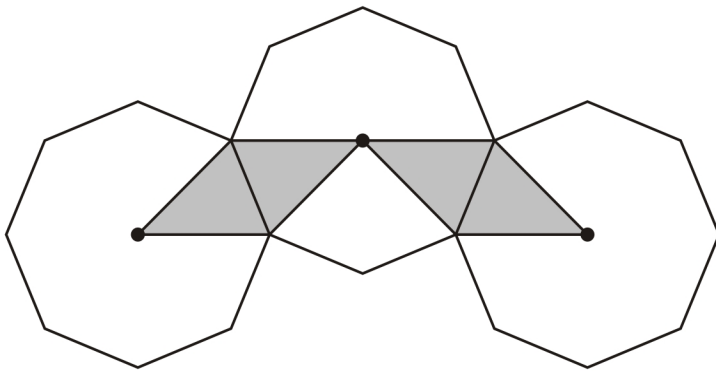
$1\frac{1}{5}$

1 mark

41

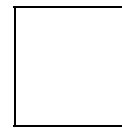
The diagram shows three regular octagons joined together.

There is a dot at the centre of each octagon.



What fraction of the diagram is shaded?

Handwritten mark



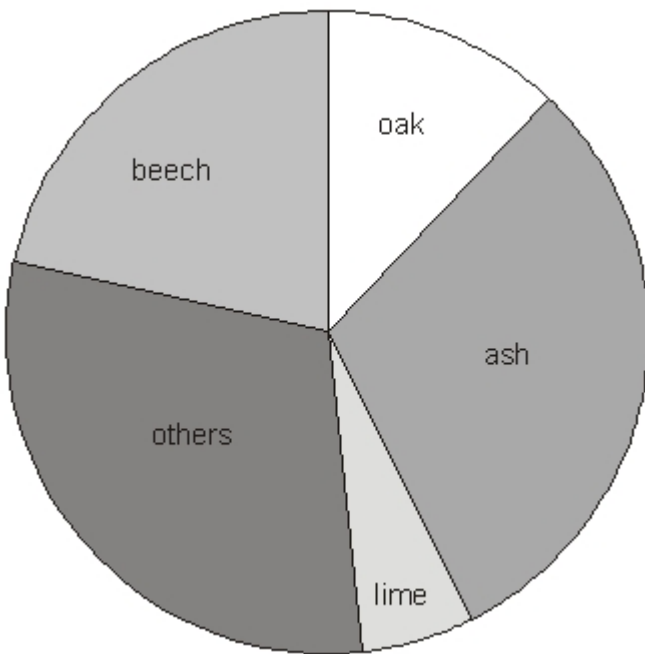
1 mark

42


Class 6 did a survey of the number of trees in a country park.



This pie chart shows their results.



Estimate the **fraction** of trees in the survey that are **oak** trees.



1 mark

The children counted 60 **ash** trees.

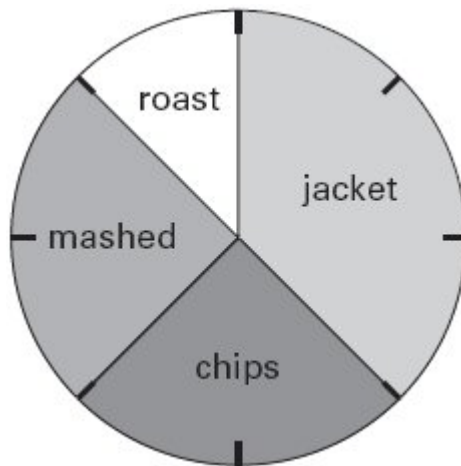
Use the pie chart to estimate the **number** of **beech** trees they counted.

Handwritten mark

1 mark

43

This pie chart shows how the children in Class 6 best like their potatoes cooked.



32 children took part in the survey.

Look at the four statements below.

For each statement put a tick (✓) if it is **correct**.

Put a cross (✗) if it is **not correct**.

Handwritten mark

10 children like chips best.

25% of the children like mashed potatoes best.

$\frac{1}{5}$ of the children like roast potatoes best.

12 children like jacket potatoes best.

2 marks

44 Write these fractions in order of size starting with the smallest.

$$\frac{3}{4}$$

$$\frac{3}{5}$$

$$\frac{9}{10}$$

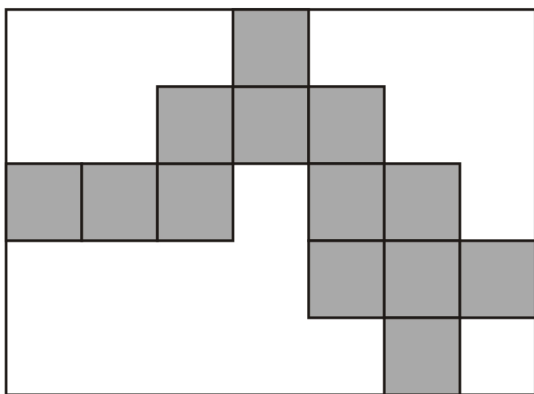
$$\frac{17}{20}$$

Handwritten mark

smallest

1 mark

45 Here is a rectangle with 13 identical shaded squares inside it.



What fraction of the rectangle is shaded?

Handwritten mark

1 mark

46 Three-quarters of a number is **48**

What is the number?

Handwritten mark

1 mark

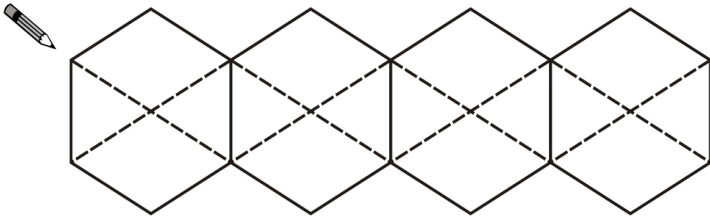
47 Calculate $\frac{3}{8}$ of **980**

Handwritten mark

1 mark

48 This diagram shows four regular hexagons.

Shade in **one third** of the diagram.



1 mark

49 Calculate $\frac{1}{5}$ of 325

1 mark

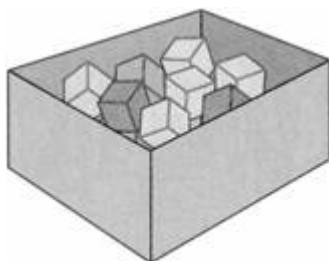
50 Which is larger, $\frac{1}{3}$ or $\frac{2}{5}$?

Explain how you know.

1 mark

51 There are 24 coloured cubes in a box.

Three-quarters of the cubes are red,
four of the cubes are blue
and the rest are green.



How many **green** cubes are in the box?

Show your method

2 marks

One more **blue** cube is put into the box.

What fraction of the cubes in the box are **blue** now?

1 mark

52

Complete these fractions to make each equivalent to $\frac{3}{5}$



$$\frac{\square}{10}$$

$$\frac{\square}{15}$$

$$\frac{12}{\square}$$

1 mark

53

Here is a recipe for raspberry ice cream.

raspberry ice cream for 8 people
$\frac{1}{2}$ litre of cream
1kg raspberries
250g sugar



This recipe is for **8 people**.

Josie makes enough raspberry ice cream for **12 people**.

How much **cream** does she use?

litre litre

1 mark

Fred makes raspberry ice cream in the same way.

He uses **2½ kg** of **raspberries**.

How much **sugar** does he use?

Show your method																														

2 marks

Mark schemes

1	56	[1]
2	5	[1]
3	30	[1]
4	86	[1]
5	$\frac{1}{12}$	[1]
6	20	[1]
7	$\frac{7}{8}$	[1]
8	80	[1]
9	60	[1]
10	$\frac{1}{8}$	[1]
11	$4\frac{5}{9}$	[1]
12	24	[1]
13	$2\frac{2}{3}$	[1]
14	360	[1]

15 $\frac{1}{15}$

[1]

16 25

[1]

17 $\frac{2}{5}$

[1]

18 $\frac{1}{10}$

[1]

19 61

[1]

20 30

[1]

21 8

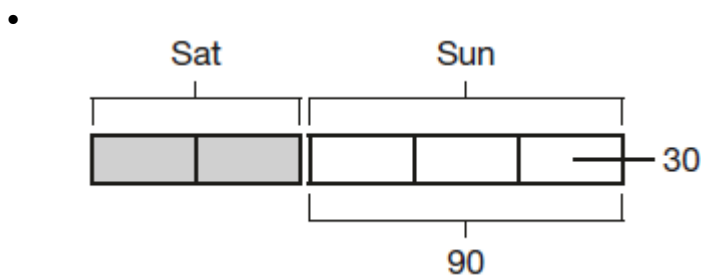
[1]

22 Award **TWO** marks for the correct answer of 150 pages.

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g:

- $\frac{3}{5} = 90$
 $9 \div 3 = 30$
 30×5

OR



30×5

*Answer need not be obtained for the award of **ONE** mark.*

Up to 2

[2]

23Award **ONE** mark for any of the following:

$$\frac{7}{16} < \frac{6}{12} < \frac{5}{8}$$

OR

$$\frac{7}{16} < \frac{6}{12} < \frac{3}{4}$$

OR

$$\frac{7}{16} < \frac{5}{8} < \frac{3}{4}$$

OR

$$\frac{6}{12} < \frac{5}{8} < \frac{3}{4}$$

Accept equivalent fractions correctly ordered, e.g:

$$\frac{21}{48} < \frac{24}{48} < \frac{30}{48}$$

$$\frac{21}{48} < \frac{24}{48} < \frac{36}{48}$$

$$\frac{7}{16} < \frac{10}{16} < \frac{12}{16}$$

$$\frac{12}{24} < \frac{15}{24} < \frac{18}{24}$$

[1]**24**Award **TWO** marks for the correct answer of 90g.If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g:

- $300 \div 400 = \frac{3}{4}$

$$\frac{3}{4} \times 120$$

*Answer need not be obtained for the award of **ONE** mark.*

Up to 2

[2]**25**

$$\frac{5}{12}$$

[1]

26

All three correct

2433

 1000

0.457

0.023

2

or

Any 2 correct

1

[2]**27**
 $\frac{7}{6} \quad \frac{5}{4} \quad \frac{4}{3} \quad \frac{17}{12}$

Accept equivalent, e.g. $\frac{14}{12} \quad \frac{15}{12} \quad \frac{16}{12} \quad \frac{17}{12}$

[1]**28**Award **TWO** marks for the correct answer of 75.If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:

- $125 \div 50 = 2.5$

- $2.5 \times 30 =$ wrong answer

OR

- 50g oats 30g raisins

- 25g oats 15g raisins ($\div 2$)

- 125g oats wrong answer ($\times 5$)

*Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2

[2]

29Award **TWO** marks for the sequence completed correctly as shown:

$$1$$

$$2\frac{1}{2}$$

$$4$$

$$5\frac{1}{2}$$

$$7$$

If the answer is incorrect, award **ONE** mark for two numbers correct.

Up to 2

[2]**30**

(a) $6\frac{1}{4}$

*Accept equivalent fractions.***Do not accept** $5\frac{5}{4}$

1

(b) $1\frac{1}{2}$

Accept equivalent fractions, eg $1\frac{2}{4}, \frac{3}{2}, 1.5, 150\%$

1

[2]**31**

(a) 109

1

(b) An explanation that recognises that 100 people get up before 9am which is two-thirds of the total (150).

■ '13 + 28 + 59 = 100 which is two-thirds of the total'

■ ' $\frac{1}{3}$ of 150 = 50 and $2 \times 50 = 100$ '■ ' $\frac{2}{3}$ of 150 is 100'

■ '36 + 14 = 50 which is one-third after 9am'

Do not accept vague or incomplete explanations, eg:

■ 'One-third are 9 o'clock or later'

■ '100 got up at 9am'

■ 'Twice as many got up before 9am.'

■ '13 + 28 + 59 = 100'

U1

[2]

32

Numbers in order, as shown:

$$0.5 \quad \frac{3}{5} \quad 0.65 \quad \frac{2}{3}$$

Accept equivalent decimals, percentages or fractions.

[1]**33**

Numbers in order as shown:

0.34	43%	0.7	$\frac{3}{4}$
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Accept use of equivalent fractions, decimals or percentages, eg 0.34, 0.43, 0.7, 0.75

[1]**34**Award **TWO** marks for the correct answer of 24If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:

- $18 \div 3 \times 4 =$ wrong answer

OR

- $18 \div 3 = 6$

$$6 + 18 = \text{wrong answer}$$

*Working must be carried through to reach an answer for the award of **ONE** mark.*

OR

- a 'trial and improvement' method, eg

$$18 \text{ girls} + 14 \text{ boys} = 32 \quad 32 \div 4 = 8$$

$$18 \text{ girls} + 10 \text{ boys} = 28 \quad 28 \div 4 = 7$$

$$18 \text{ girls} + 4 \text{ boys} = 22 \quad 22 \div 4 =$$

*A 'trial and improvement' method must show evidence of improvement, but a final answer need not be reached for the award of **ONE** mark.*

Up to 2
U1

[2]

35 Fraction circled as shown:

$$\frac{7}{8} \quad \frac{2}{5} \quad \frac{1}{3} \quad \frac{5}{8} \quad \frac{3}{6}$$

Accept alternative unambiguous indications, eg fraction ticked, crossed or underlined.

[1]

36 (a) Answer in the range $\frac{13}{100}$ to $\frac{1}{5}$ inclusive

Range includes $\frac{1}{6}$ and $\frac{1}{7}$
Accept decimals or percentages.
(0.13 to 0.2 inclusive)
(13% to 20 % inclusive)

1

(b) Answer in the range 500 to 800 inclusive

1

[2]

37 Two fractions circled as shown:

$$\frac{2}{3} \quad \frac{6}{10} \quad \frac{9}{12} \quad \frac{10}{15} \quad \frac{6}{20}$$

Do not award the mark if additional incorrect fractions are circled.
Accept alternative unambiguous indications, eg fractions ticked, crossed or underlined.

[1]

38 (a) $\frac{1}{3}$

Accept equivalent fractions or decimals.

1

(b) $\frac{1}{9}$

Accept equivalent fractions or decimals.

U1

[2]

39Award **TWO** marks for the correct answer of 80If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:

- $60 \div 3 \times 4 =$ wrong answer

OR

- $40 + 20 = 60$
- $40 \times 2 =$ wrong answer

*Working must be carried through to reach an answer for the award of **ONE** mark.*

OR

- a 'trial and improvement' method, eg

$$\left(\frac{1}{2} \times 60\right) + \left(\frac{1}{4} \times 60\right) = 45$$

$$\left(\frac{1}{2} \times 120\right) + \left(\frac{1}{4} \times 120\right) = 90$$

$$\left(\frac{1}{2} \times 100\right) + \left(\frac{1}{4} \times 100\right) = 75$$

*A 'trial and improvement' method must show evidence of improvement, but a final answer need not be reached for the award of **ONE** mark.*

OR

- $\frac{1}{2}x + \frac{1}{4}x = 60$

$$\frac{3}{4}x = 60$$

$$x = \text{wrong answer}$$

Up to 2 (U1)

[2]**40**

Two numbers circled as shown:

1.1 1.4 $1\frac{1}{3}$ $1\frac{1}{5}$

***Do not** award the mark if additional incorrect numbers are circled.
Accept: alternative unambiguous indications, eg numbers ticked, crossed or underlined.*

[1]

41 $\frac{1}{6}$

Accept: equivalent fractions, eg $\frac{4}{24}$

[1]

42 (a) Answer in the range $\frac{1}{10}$ to $\frac{3}{20}$ inclusive.

Range includes $\frac{1}{7}, \frac{1}{8}, \frac{1}{9}$ and $\frac{1}{10}$
Accept decimals (0.1 to 0.15 inclusive) or percentages
(10% -15% inclusive).

1

(b) Answer in the range 40 to 50 inclusive.

1

[2]

43 Award **TWO** marks for boxes ticked and crossed as shown:



If the answer is incorrect, award **ONE** mark for any three boxes correctly completed.

Accept alternative unambiguous indications such as **Y** or **N**.

For **TWO** marks, accept:



Up to 2

[2]

44

$\frac{3}{5}$	$\frac{3}{4}$	$\frac{17}{20}$	$\frac{9}{10}$
---------------	---------------	-----------------	----------------

Fractions must be written in the correct order for the award of the mark.

Accept equivalent fractions or decimals.

[1]

45

$$\frac{13}{35}$$

U1

[1]

46

64

[1]

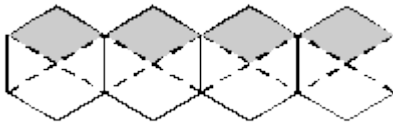
47

367.5 OR $367\frac{1}{2}$

[1]

48

Equivalent of one third of each hexagon shaded, or a total of $1\frac{1}{3}$ hexagons shaded, eg



Accept part shapes shaded as long as the intention is clear.

Accept inaccuracies in shading provided the intention is clear.

[1]

49

65

[1]

50

An appropriate explanation which recognises that:

$$\frac{1}{3} = \frac{5}{15} \text{ and } \frac{2}{5} = \frac{6}{15}$$

No mark is awarded for writing $\frac{2}{5}$ alone.

OR

$$\frac{1}{3} = \frac{2}{6} \text{ which is less than } \frac{2}{5}$$

Do not accept vague or arbitrary explanations, eg

- 'Because $\frac{2}{5}$ is bigger than $\frac{1}{3}$;
- 'Because $\frac{1}{3}$ comes first on a number line'.

OR

that $\frac{1}{3}$ is less than $\frac{2}{5}$ because $3 \times \frac{2}{5}$ is greater than 1

[1]

51

(a) Award **TWO** marks for the correct answer of 2

If the answer is incorrect, award **ONE** mark for evidence of appropriate method, eg

$$\frac{3}{4} \text{ of } 24 = 18$$

$$\text{green} = 24 - 18 - 4$$

Answer need not be obtained for the award of the mark.

Up to 2

(b) $\frac{1}{5}$

Accept equivalent fractions.

Do not accept '1 in 5' **OR** '1 : 5'.

1

[3]

52

Fractions completed as shown below:

$$\frac{\boxed{6}}{10} \qquad \frac{\boxed{9}}{15}$$
$$\frac{\boxed{20}}{12}$$

All three fractions must be correct for the award of the mark.

[1]

53

(a) $\frac{3}{4}$ – **OR** 0.75

Accept equivalent fractions.

1

(b) Award **TWO** marks for the correct answer of 625

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg

$$2.5 \times 250$$

OR

$$250 + 250 + 125$$

*Accept for **ONE** mark 0.625 **OR** 6.25 **OR** 62.5 **OR** 6250
as evidence of appropriate method.*

Calculation need not be performed for the award of the mark.

Up to 2

[3]