Mathletics

Series F Teacher

Fractions, Decimals and Percentages

Series F – Fractions, Decimals and Percentages

Contents

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Series F – Fractions, Decimals and Percentages

Pages 1–2

1a $\frac{3}{4}$

b $\frac{2}{10}$

c $\frac{3}{12}$

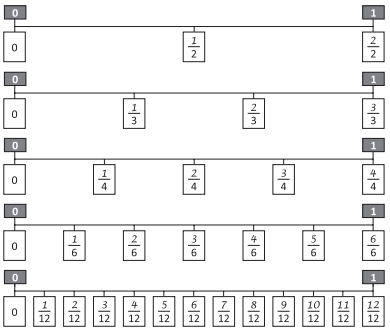
2a $\frac{2}{4}$; $\frac{3}{6}$; $\frac{4}{8}$ or $\frac{5}{10}$ or $\frac{6}{12}$

b $\frac{2}{6}$; $\frac{4}{12}$

c $\frac{7}{10}$

3 Answers will vary. Teacher check.

4



5a True

b False

c True

d True

e True

f False

g True

h True

6a $\frac{2}{6}$ $\frac{1}{2}$ $\frac{8}{12}$

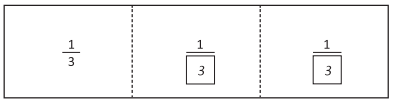
b $\frac{1}{12}$ $\frac{1}{4}$ $\frac{2}{6}$

c $\frac{5}{12}$ $\frac{1}{2}$ $\frac{3}{4}$

d $\frac{1}{4}$ $\frac{1}{3}$ $\frac{5}{6}$

Pages 3–5

1a



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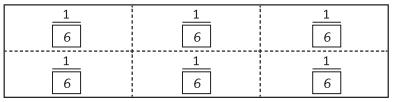

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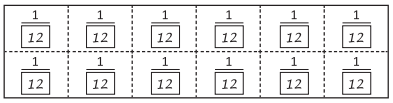


2a $\frac{2}{6}$; $\frac{4}{12}$

b $\frac{2}{3}$; $\frac{4}{6}$

c $\frac{1}{2}$, $\frac{4}{8}$, $\frac{5}{10}$ ...

3a 3

b 4

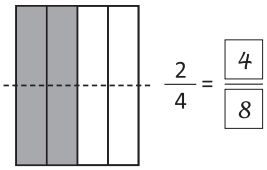
c 2

d 4

e 4

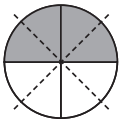
f 6

4b



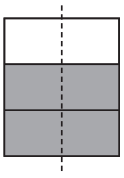
$\frac{2}{4} = \frac{4}{8}$

c



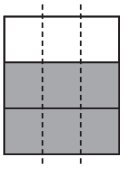
$\frac{2}{4} = \frac{4}{8}$

d



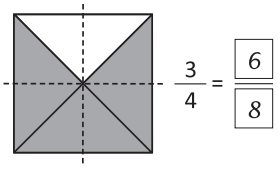
$\frac{2}{3} = \frac{4}{6}$

e



$\frac{2}{3} = \frac{6}{9}$

f



$\frac{3}{4} = \frac{6}{8}$

5 Yes; Diagrams will vary.

6 No; Diagrams will vary.

7a a is correct

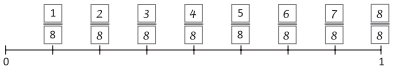
b $\frac{2}{3} = \frac{4}{6}$

c $\frac{4}{5} = \frac{8}{10}$

d $\frac{1}{3} = \frac{3}{9}$

You have the nominators correct but your denominators are incorrect.

8b



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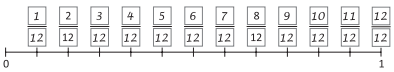
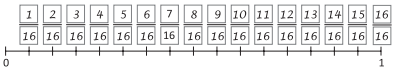


d



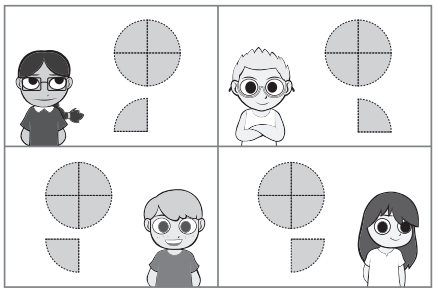
9a $\frac{2}{8}$, $\frac{3}{12}$, $\frac{4}{16}$, $\frac{5}{20}$

b Yes – numerator increases by one, denominator goes up in 4s.

Pages 6–9

Problem 1

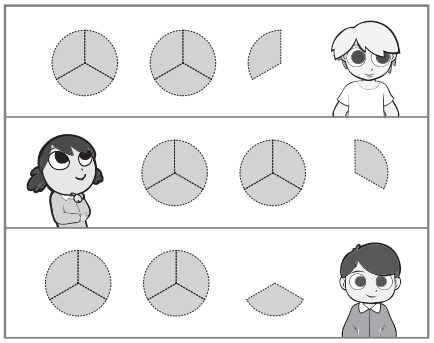
20;



$1\frac{1}{4}$

Problem 2

3; 21;



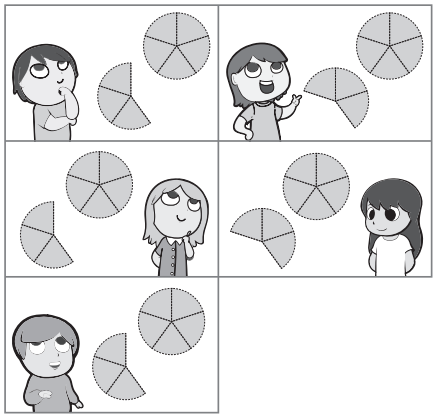
$2\frac{1}{3}$

Series F – Fractions, Decimals and Percentages

Pages 6–9

Problem 3

5; 40;



$1\frac{3}{5}$

Pages 10–12

1a $2\frac{1}{2}$ or $\frac{3}{6}$

b $2\frac{1}{2}$ or $\frac{2}{4}$

c $1\frac{2}{3}$

d $1\frac{3}{4}$

e $2\frac{1}{2}$ or $\frac{2}{4}$

f $1\frac{2}{3}$

2a–d Diagrams will vary.

3 Answers will vary.
Sample answers:

a $1\frac{1}{2} > 1\frac{1}{4}$

b $3\frac{1}{3} < 3\frac{1}{2}$

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

d $2\frac{3}{6} > 2\frac{1}{4}$

e $2\frac{1}{3} > 2\frac{1}{4}$

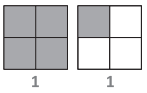
4a $\frac{9}{6}$

b $\frac{6}{9}$

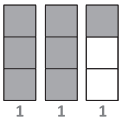
c $\frac{32}{12}$

d $\frac{3}{8}$

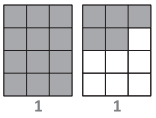
5a



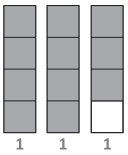
b



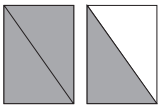
c



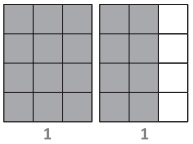
d



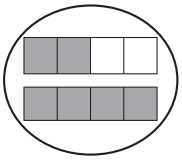
e



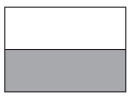
f



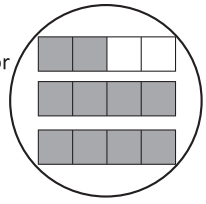
6a $\frac{5}{4}$ or



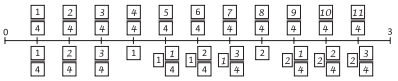
b $\frac{3}{2}$ or



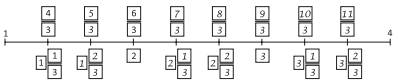
c $\frac{9}{4}$ or



7a



b



8a $\frac{9}{4}$

b $1\frac{2}{11}$

c Possible answers:
$\frac{5}{3}, \frac{6}{3}, \frac{7}{3}, \frac{8}{3}, \frac{9}{3}$

d $\frac{10}{4} = 2\frac{2}{4}$ ($2\frac{1}{2}$) hours

9a 4

b 7

c 9

d 7

e 4

f $\frac{5}{3}$

g $1\frac{2}{4}$

h $1\frac{1}{3}$

i $\frac{11}{4}$

Page 13

1a $\frac{3}{4} \times 2 = \frac{6}{4} = 1\frac{1}{2}$

b $\frac{2}{3} \times 4 = \frac{8}{3} = 2\frac{2}{3}$

c $\frac{2}{5} \times 7 = \frac{14}{5} = 2\frac{4}{5}$

d $\frac{3}{7} \times 6 = \frac{18}{7} = 2\frac{4}{7}$

e $2\frac{1}{4} \times 2 = \frac{9}{4} \times 2 = \frac{18}{4} = 4\frac{1}{2}$

f $3\frac{1}{3} \times 4 = \frac{10}{3} \times 4 = \frac{40}{3} = 13\frac{1}{3}$

g $2\frac{2}{5} \times 3 = \frac{12}{5} \times 3 = \frac{36}{5} = 7\frac{1}{5}$

Series F – Fractions, Decimals and Percentages

Page 13

1h $1\frac{2}{7} \times 2 = \frac{9}{7} \times 2 = \frac{18}{7} = 2\frac{4}{7}$

Page 14

What to do

Row 1: $\frac{2}{4}$ or $\frac{1}{2}$; $\frac{1}{8}$; $\frac{1}{8}$

Row 2: $\frac{2}{4}$ or $\frac{1}{2}$; $\frac{1}{4}$; $\frac{2}{4}$ or $\frac{1}{2}$

Row 3: $\frac{4}{8}$ or $\frac{1}{2}$; $\frac{4}{16}$ or $\frac{1}{4}$; $\frac{3}{8}$

Row 4: $\frac{2}{4}$ or $\frac{1}{2}$; $\frac{5}{8}$

Row 5: $\frac{3}{9}$ or $\frac{1}{3}$

Page 15

What to do

a 18 chocolates

b 6 chocolates

c 24 chocolates

d 24 chocolates

e $\frac{24}{72}$ or $\frac{1}{3}$

What to do next

18 + 6 + 24 + 24 = 72;

$\frac{18}{72} + \frac{6}{72} + \frac{24}{72} + \frac{24}{72} = \frac{72}{72}$

Page 16

Getting ready

Observe students.

What to do

Observe students.

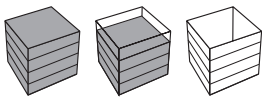
Page 17

What to do

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

$2\frac{1}{2}$

$1\frac{3}{4}$



$1\frac{2}{3}$

Page 18

What to do

Observe students.

Page 19

1a $\frac{6}{10}$; 0.6

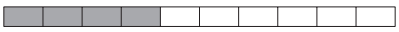
b $\frac{4}{10}$; 0.4

c $\frac{3}{10}$; 0.3

2a

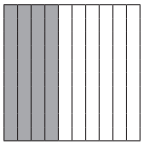
b

c



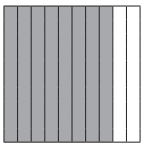
d

3a



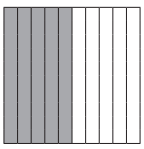
0.4

b



0.8

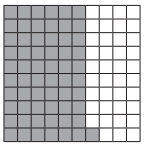
c



0.5

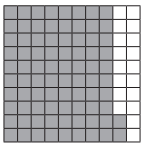
Pages 20–21

1a



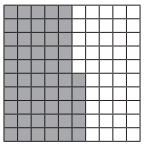
0.61

b



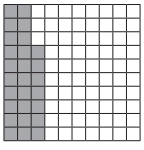
0.82

c



0.55

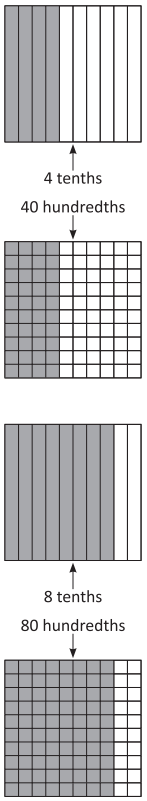
d



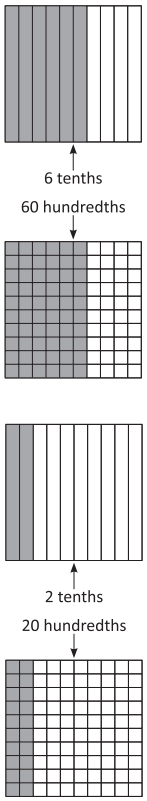
0.27

2 Yes

a



b



c

d

3b $\frac{7}{10}$ and $\frac{5}{100}$

c $\frac{1}{10}$ and $\frac{16}{100}$

d $\frac{3}{10}$ and $\frac{7}{100}$

e 2 wholes, $\frac{7}{10}$ and $\frac{5}{100}$

4a $\frac{42}{100} = \frac{4}{10} + \frac{2}{100} = 0.42$

b $\frac{25}{100} = \frac{2}{10} + \frac{5}{100} = 0.25$

c $\frac{38}{100} = \frac{3}{10} + \frac{8}{100} = 0.38$

d $\frac{75}{100} = \frac{7}{10} + \frac{5}{100} = 0.75$

Series F – Fractions, Decimals and Percentages

Pages 22–23

1

	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
a			5	3 •	8		
b		7	8	4 •	2	3	
c			9	0 •	8	0	4
d		6	0	0 •	8	4	3
e				4 •	9	8	
f				3 •	4	2	
g			2	3 •	0	4	6
h				0 •	0	0	8

2a F

b T

c F

d T

e T

f F

3a (0.7)

b (6 tenths)

c (7.5)

d (15)

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

f (35)

4a >

b >

c <

d <

e =

f =

5a Harry – tallest; Ali – shortest

b Ali (79.934 kg), Sebastian (88.91 kg), George (99.552 kg)

5c Harry and Joe

d Joe – he is the heaviest.

e 1.74 m–1.83 m

Page 24

1a

3.04	3.34	3.4	3.43	4.03

b

7.376	7.637	7.673	7.736	7.763

c

89.789	89.879	89.978	98.899	98.987

2a false

b true

c false

d true

e true

f true

Page 25

1a 4

b 9

c 28

d 75

e 1,000

f 7,688

2a 9.4

b 0.5

c 69.3

d 86.7

e 538.4

f 2,972.9

3a–f Answers will vary.

Pages 26–27

1 Answers will vary.

2a 0.5; 50

b 30

c $\frac{90}{100}$; 0.9

d $\frac{25}{100}$; 25

e 0.45; 45

2f $\frac{75}{100}$; 75

g $\frac{89}{100}$; 0.89

h $\frac{42}{100}$; 42

3a true

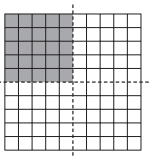
b false

c false

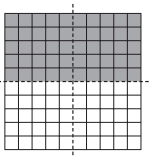
d false

e true

4a

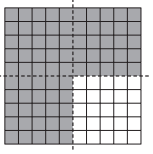


b



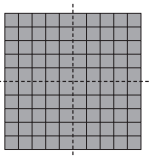
0.50; 50

c



0.75; 75

d



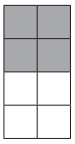
1.0; 100

5a

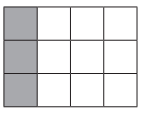
b

c

d



e

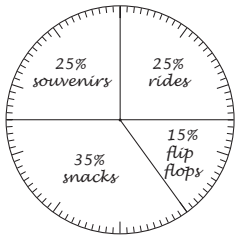


f

Series F – Fractions, Decimals and Percentages

Pages 26–27

6



Page 28

1a £25

b £12

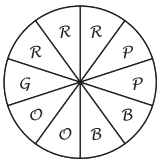
c £30

d £15

e £100

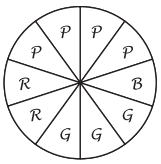
2a

R	Go to a restaurant 30%
G	Go to the beach 10%
O	See a movie..... 20%
B	Go shopping..... 20%
P	Play sport 20%



b

P	Pizza 80
R	Hamburgers 40
G	Pasta..... 60
B	Curry 20



Page 29

1a 0.2

b 60%

c 10%

d £22.50

e $\frac{1}{4}$

f $\frac{1}{8}$

g Because 100% is the maximum effort possible.

Pages 30–31

What to do

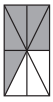
Observe students.

Pages 32–33

1a  $\frac{2}{3}$

1b  $\frac{6}{9}$

1c  $\frac{7}{10}$

d  $\frac{5}{8}$

2a $\frac{3}{5}$

b $\frac{5}{7}$

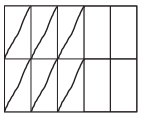
c $\frac{3}{4}$

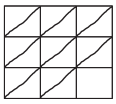
d $\frac{7}{10}$

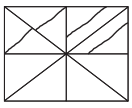
3a $\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$

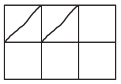
b $\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$

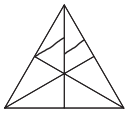
4 When we add fractions, we only add the numerators. The denominators don't change because we have not changed the way the whole has been split.

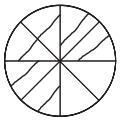
5a 

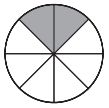
b  $\frac{1}{9}$

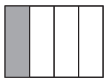
c  $\frac{4}{8}$

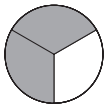
d  $\frac{4}{6}$

e  $\frac{4}{6}$

f  $\frac{2}{8}$

6a  $\frac{6}{8}$

b  $\frac{3}{4}$

c  $\frac{1}{3}$

7a $\frac{3}{4}$

b $\frac{4}{8}$

c $\frac{3}{4}$

d $2\frac{1}{3}$

Page 34

1a $2 + \frac{1}{2} = \frac{2}{1}\frac{1}{2}$

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

c $3 + \frac{3}{4} = \frac{3}{3}\frac{3}{4}$

d $\frac{1}{2} + 5 = \frac{5}{1}\frac{1}{2}$

e $\frac{2}{3} + 4 = \frac{4}{2}\frac{2}{3}$

f $\frac{4}{7} + 9 = \frac{9}{4}\frac{4}{7}$

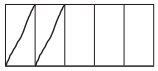
g $\frac{1}{2} + 6 = 6\frac{1}{2}$

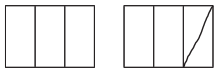
h $2 + \frac{2}{3} = 2\frac{2}{3}$

i $\frac{1}{5} + 2 = \frac{2}{5} = 2\frac{3}{5}$

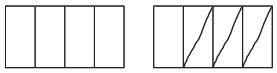
Series F – Fractions, Decimals and Percentages

Page 34

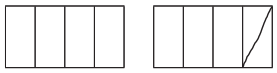
2a  $= \frac{3}{5}$

b  $= 1\frac{2}{3}$

c  $= \frac{3}{4}$

d  $= 1\frac{1}{4}$

e  $= \frac{5}{8}$

f  $= 1\frac{3}{4}$

Page 35

1a $\frac{2}{3} + \frac{1}{6} = \frac{4}{6} + \frac{1}{6} = \frac{5}{6}$

b $\frac{2}{9} + \frac{1}{3} = \frac{2}{9} + \frac{3}{9} = \frac{5}{9}$

c $\frac{4}{5} - \frac{1}{10} = \frac{8}{10} - \frac{1}{10} = \frac{7}{10}$

d $\frac{2}{3} - \frac{7}{12} = \frac{8}{12} - \frac{7}{12} = \frac{1}{12}$

2a $\frac{3}{7} + \frac{9}{14} = \frac{6}{14} + \frac{9}{14} = \frac{15}{14} = 1\frac{1}{14}$

b $\frac{3}{4} - \frac{1}{3} = \frac{9}{12} - \frac{4}{12} = \frac{5}{12}$

c $\frac{7}{18} + \frac{2}{3} = \frac{7}{18} + \frac{12}{18} = \frac{19}{18} = 1\frac{1}{18}$

Page 36

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

$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$

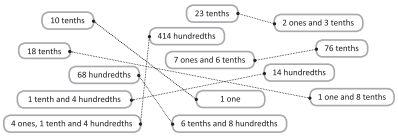
b–d Answers will vary.

2a $2\frac{1}{4}$

b Answers will vary.

Pages 37–38

1



2a

$$\begin{array}{r} 2.6 \\ +\ 3.3 \\ \hline 5.9 \end{array}$$

b

$$\begin{array}{r} 4.7 \\ +\ 5.4 \\ \hline 10.1 \\ {\scriptstyle \square\ \boxed{1}} \end{array}$$

c

$$\begin{array}{r} 5.4 \\ +\ 3.5 \\ \hline 8.9 \end{array}$$

d

$$\begin{array}{r} 1.5 \\ +\ 12.3 \\ \hline 13.8 \\ {\scriptstyle \square\ \square} \end{array}$$

e

$$\begin{array}{r} 18.6 \\ +\ 11.2 \\ \hline 29.8 \\ {\scriptstyle \square\ \square} \end{array}$$

f

$$\begin{array}{r} 9.4 \\ +\ 3.7 \\ \hline 13.1 \\ {\scriptstyle \square\ \boxed{1}} \end{array}$$

3a

$$\begin{array}{r} 3.46 \\ +\ 5.23 \\ \hline 8.69 \\ {\scriptstyle \square\ \square} \end{array}$$

b

$$\begin{array}{r} 4.72 \\ +\ 3.19 \\ \hline 7.91 \\ {\scriptstyle \square\ \square} \end{array}$$

c

$$\begin{array}{r} 7.36 \\ +\ 5.65 \\ \hline 13.01 \\ {\scriptstyle \boxed{1}\ \boxed{1}\ \boxed{1}} \end{array}$$

4a

$$\begin{array}{r} 6.06 \\ +\ 5.42 \\ \hline 11.48 \end{array}$$

b

$$\begin{array}{r} 4.294 \\ +\ 8.587 \\ \hline 12.881 \\ {\scriptstyle 1\ 1} \end{array}$$

c

$$\begin{array}{r} 7.25 \\ +\ 8.35 \\ \hline 15.60 \end{array}$$

d

$$\begin{array}{r} £9.50 \\ +\ £4.95 \\ \hline £14.45 \end{array}$$

5a £11.25

b £4.95

c Answers will vary.

Series F – Fractions, Decimals and Percentages

Pages 39–40

1a

$$\begin{array}{r} 8.3 \\ -\ 2.2 \\ \hline 6.1 \end{array}$$

b

$$\begin{array}{r} 4.7 \\ -\ 3.4 \\ \hline 1.3 \end{array}$$

c

$$\begin{array}{r} \overset{4}{\cancel{5}}.\overset{1}{4} \\ -\ 3.5 \\ \hline 1.9 \end{array}$$

d

$$\begin{array}{r} 12.3 \\ -\ 5.2 \\ \hline 7.1 \end{array}$$

e

$$\begin{array}{r} 18.6 \\ -\ 11.2 \\ \hline 7.4 \end{array}$$

f

$$\begin{array}{r} \overset{8}{\cancel{9}}.\overset{1}{4} \\ -\ 3.7 \\ \hline 5.7 \end{array}$$

2a

$$\begin{array}{r} 8.44 \\ -\ 3.24 \\ \hline 5.20 \end{array}$$

b

$$\begin{array}{r} 4.\overset{6}{\cancel{7}}\overset{1}{2} \\ -\ 2.29 \\ \hline 2.43 \end{array}$$

c

$$\begin{array}{r} \overset{5}{\cancel{6}}.\overset{14}{\cancel{5}}\overset{1}{4}8 \\ -\ 4.697 \\ \hline 1.851 \end{array}$$

3a

$$\begin{array}{r} 9.\overset{4}{\cancel{5}}\overset{1}{0} \\ -\ 2.24 \\ \hline 7.26 \end{array}$$

b

$$\begin{array}{r} \overset{5}{\cancel{6}}.\overset{1}{1}7 \\ -\ 2.30 \\ \hline 3.87 \end{array}$$

c

$$\begin{array}{r} \overset{8}{\cancel{9}}.\overset{12}{\cancel{3}}\overset{1}{0} \\ -\ 4.72 \\ \hline 4.58 \end{array}$$

4a 11.201

b 4.5

c 0.15 m

d 0.01 sec

5a 0.15 m

b 0.16 m

c 0.08 m

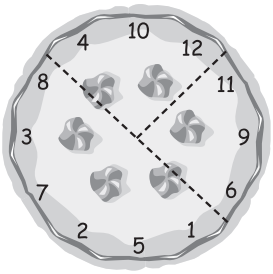
d 0.27 m

Page 41

What to do

26;

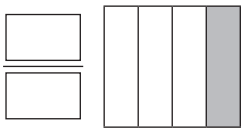
$\frac{1}{4}; \frac{1}{4}; \frac{1}{2}$

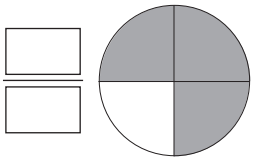


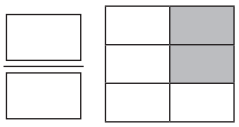
Fractions

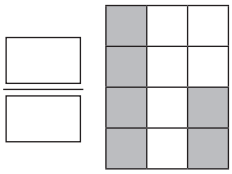
Name _____

1 **What fraction of each shape is shaded?**

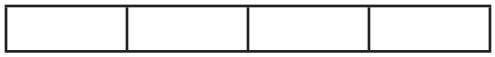
a 

b 

c 

d 

2 **Shade the following to show:**

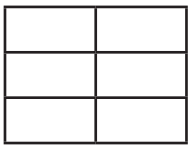
a 

$\frac{2}{4}$

b 

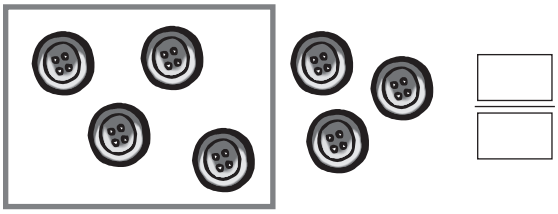
$\frac{6}{8}$

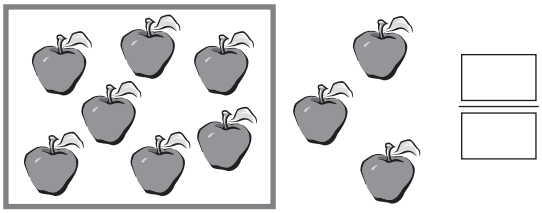
c  $\frac{4}{5}$

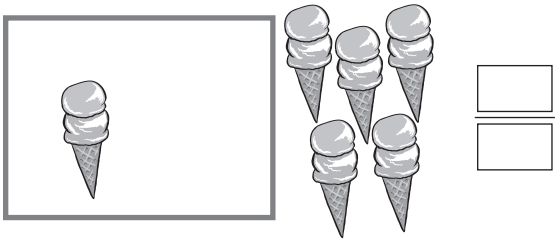
d  $\frac{3}{6}$

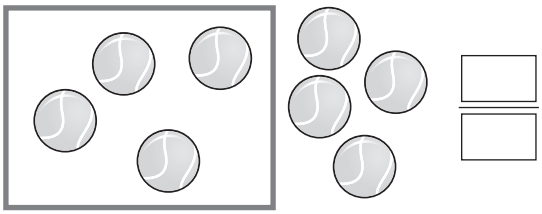
e  $\frac{2}{3}$

3 **What fraction of each group is outside the box?**

a  _____

b  _____

c  _____

d  _____

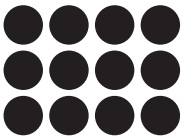
4 **What is:**

a $\frac{1}{4}$ of 12 = ☐

b $\frac{1}{3}$ of 12 = ☐

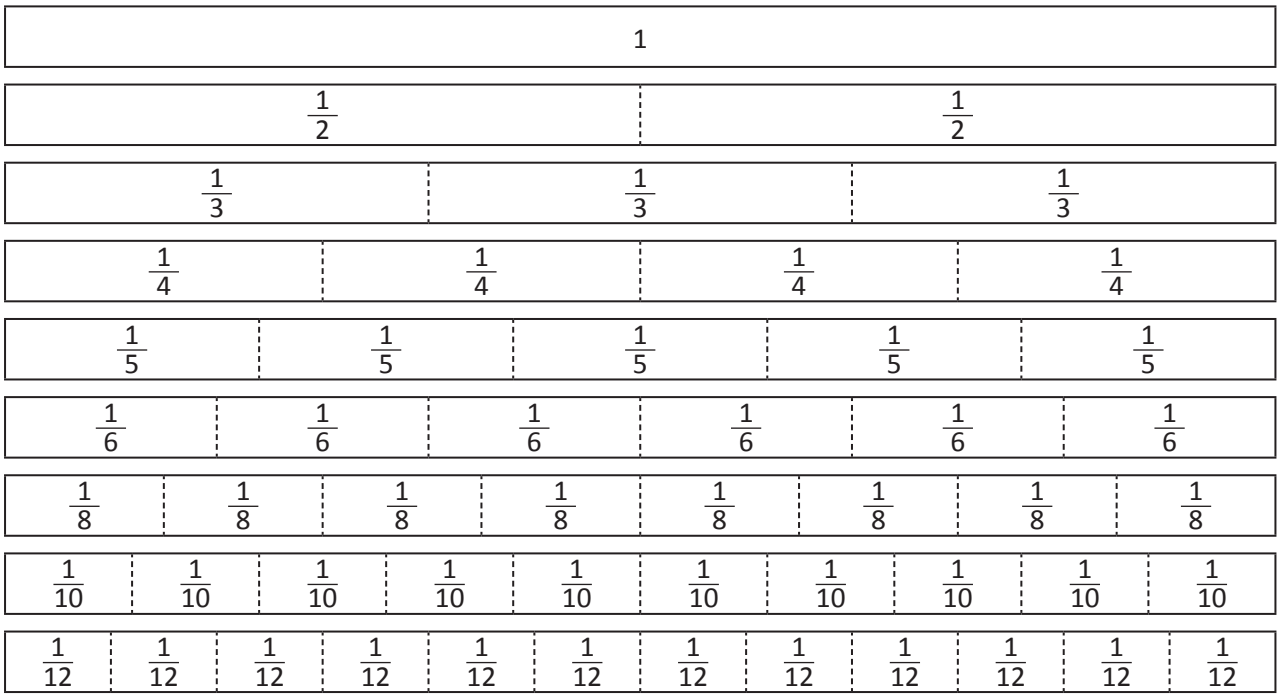
c $\frac{1}{2}$ of 12 = ☐

d $\frac{2}{3}$ of 12 = ☐



Fractions

Name _____



5 **Use the fraction strips above to help answer the following:**

a Circle the larger fraction $\frac{3}{4}$ $\frac{4}{8}$

b Circle the larger fraction $\frac{5}{6}$ $\frac{5}{10}$

c Circle the smaller fraction $\frac{2}{3}$ $\frac{2}{8}$

d Circle the smaller fraction $\frac{1}{2}$ $\frac{3}{12}$

e Put these fractions in order from smallest to largest:

$\frac{1}{6}$ $\frac{9}{12}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{3}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$

6 **Are these statements true or false?**

a $\frac{3}{4}$ is less than $\frac{1}{2}$ ____

b $\frac{5}{10}$ is the same as $\frac{1}{2}$ ____

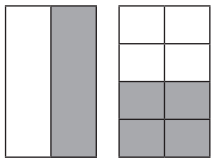
c $\frac{7}{12}$ is less than $\frac{6}{10}$ ____

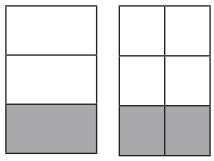
d $\frac{2}{3}$ is the same as $\frac{6}{10}$ ____

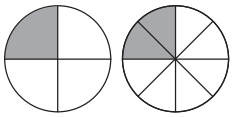
Skills	Not yet	Kind of	Got it
• Recognises, names and models common fractions of shapes			
• Recognises, names and models common fractions of collections			
• Compares and orders common fractions using visual aids			

7 **What are equivalent fractions? Explain using the fractions $\frac{1}{2}$ and $\frac{2}{4}$. You may also draw diagrams:**

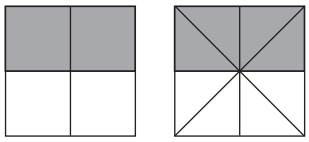
8 **Write the equivalent fraction for each of these:**

a  $\frac{1}{2} = \frac{\square}{8}$

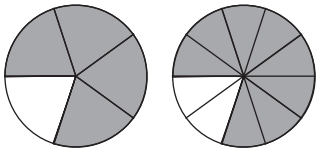
b  $\frac{1}{3} = \frac{\square}{6}$

c  $\frac{1}{4} = \frac{\square}{8}$

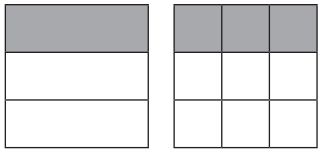
9 **These problems have been answered. Tick the ones that have been answered correctly:**

a 

$\frac{2}{4} = \frac{4}{8}$

b 

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

c 

$\frac{1}{3} = \frac{3}{6}$

$\frac{1}{2}$						$\frac{1}{2}$	
$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$	
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{6}$	$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

10 **Use the fractions strips above to help you answer the following. Write true or false for each question:**

a $\frac{1}{2}$ is equivalent to $\frac{3}{6}$ ..... ( )

b $\frac{2}{4}$ is equivalent to $\frac{1}{3}$ ..... ( )

c $\frac{2}{8}$ is equivalent to $\frac{2}{6}$ ..... ( )

d $\frac{3}{4}$ is equivalent to $\frac{6}{8}$ ..... ( )

Fractions

Name _____

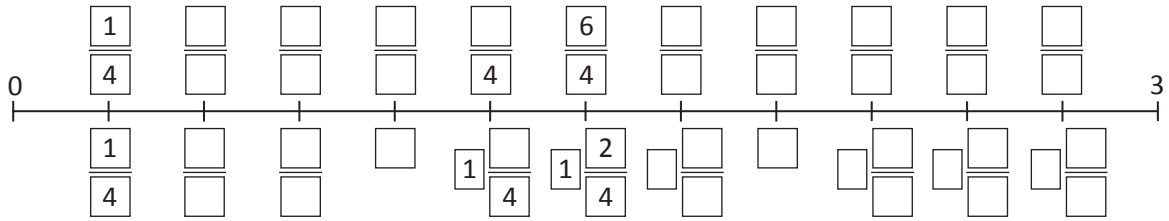
11 **Answer true or false to the following:**

a $1\frac{1}{2}$ is a mixed number ..... ( )

b $2\frac{3}{4}$ is an improper fraction ..... ( )

c $\frac{11}{4}$ is an improper fraction ..... ( )

12 **Complete the number lines by filling in the boxes. The mixed numbers go on the bottom and the improper fractions go on the top:**



13 **Use the number line in Question 6 to help you answer the following:**

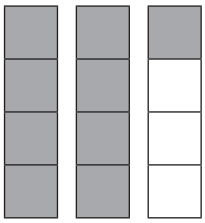
a Write the mixed number that represents $\frac{6}{4}$ ☐☐/☐

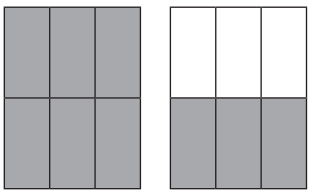
b Write the improper fraction that represents $1\frac{1}{4}$ ☐/☐

c Write the mixed number that represents $\frac{11}{4}$ ☐☐/☐

d Write the improper fraction that represents $1\frac{2}{4}$ ☐/☐

14 **Express these fractions as a mixed and as an improper fraction:**

a  ☐☐/☐ ☐/☐

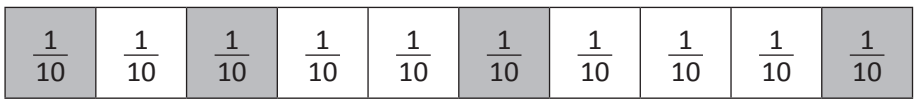
b  ☐☐/☐ ☐/☐

Skills	Not yet	Kind of	Got it
• Recognises, names and models simple equivalent fractions			
• Recognises, names and models mixed numbers and improper fractions			
• Uses diagrams, fraction strips and number lines to represent fractions			

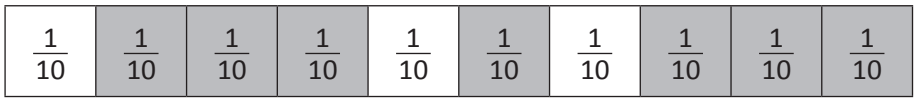
Fractions, decimals and percentages Name _____

1 **Expresss the shaded amounts as both fractions and decimals:**

a



b



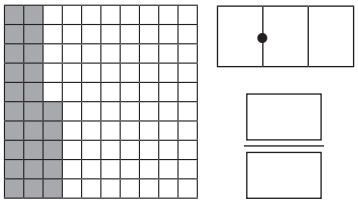
2 **Shade the fraction strips to match the fraction or decimal:**

a 0.8

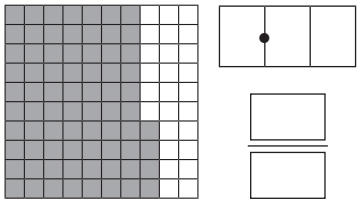
b $\frac{5}{10}$

3 **Express these amounts as both fractions and decimals:**

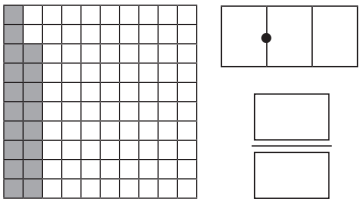
a



b

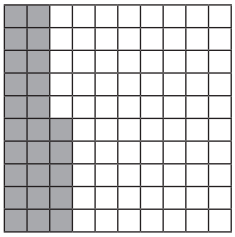


c



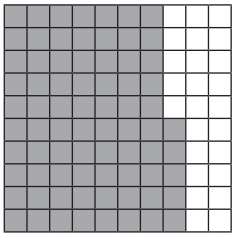
4 **Circle the true statements:**

a



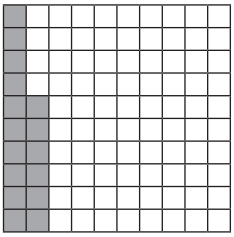
This is twenty-five hundredths. It can also be named as two tenths and five hundredths.

b



This is seventy-five hundredths. It can also be named as seven tenths and five hundredths.

c



This is sixteen hundredths. This is written as 1.6.

5 **Circle the larger number in each pair and round it to one decimal place:**

a 3.24 3.42 ☐

b 56.65 56.64 ☐

c 0.526 0.625 ☐

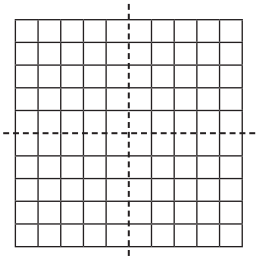
d 352.074 352.047 ☐

6 **Write these numbers in the place value chart:**

	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
a 4 tens, 3 ones and 7 tenths							
b 8 hundreds, 9 tens, 3 ones, 5 tenths and 3 hundredths							
c 9 ones, 7 tenths and 3 thousandths							
d 8 hundreds, 6 tenths, 4 hundredths and 2 thousandths			0	0			
e 5 ones, 2 tenths and 8 hundredths							

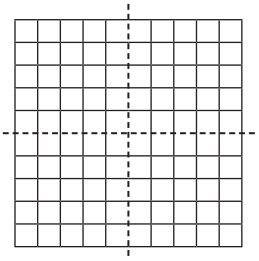
7 **Shade the following fractions and fill in the missing information:**

a



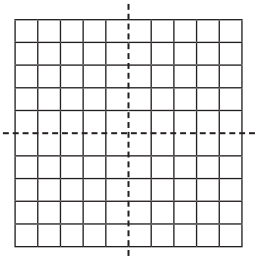
$\frac{1}{4}$	0.	%

b



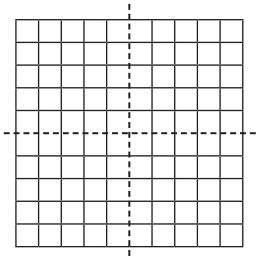
$\frac{1}{2}$	0.	%

c



$\frac{3}{4}$	0.	%

d



$\frac{4}{4}$	.	%

8 **Answer the following:**

a A sale offers 25% off an item costing £100. What is the price reduction? .....

b A sale offers 50% off an item costing £50. How much does the item now cost? .....

c What is 10% of £100? .....

Skills	Not yet	Kind of	Got it
• Recognises, names and models tenths			
• Recognises, names and models hundredths			
• Orders decimals to 3 decimal places and rounds to 1 decimal place			
• Links simple common fractions with decimals and percentages			
• Calculates simple percentages – 10%, 25% and 50%			

Calculating

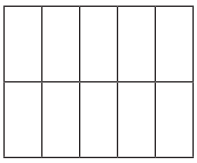
Name _____

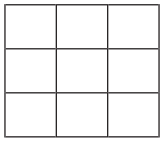
1 **Add these fractions:**

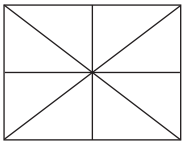
a $\frac{1}{4} + \frac{2}{4} = \frac{\square}{\square}$ **b** $\frac{2}{8} + \frac{3}{8} = \frac{\square}{\square}$ **c** $\frac{1}{5} + \frac{3}{5} = \frac{\square}{\square}$

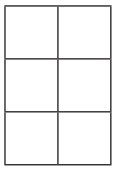
d $\frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{\square}{\square}$ **e** $\frac{1}{9} + \frac{2}{9} + \frac{4}{9} = \frac{\square}{\square}$ **f** $\frac{1}{8} + \frac{5}{8} + \frac{4}{8} = \frac{\square}{\square}$

2 **Use the shapes to help you solve these subtraction problems:**

a  $\frac{10}{10} - \frac{6}{10} = \frac{\square}{\square}$

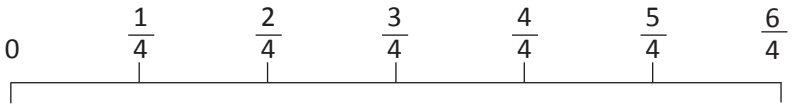
b  $\frac{9}{9} - \frac{2}{9} = \frac{\square}{\square}$

c  $\frac{8}{8} - \frac{3}{8} = \frac{\square}{\square}$

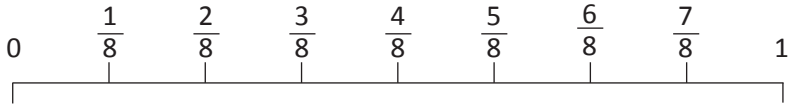
d  $\frac{6}{6} - \frac{5}{6} = \frac{\square}{\square}$

3 **Use the number lines to help you work out the answers to these problems:**

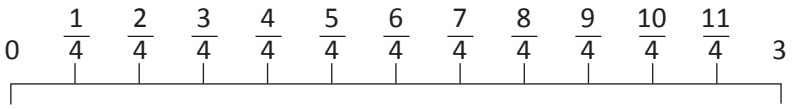
a $\frac{2}{4} + \frac{1}{4} = \frac{\square}{\square}$



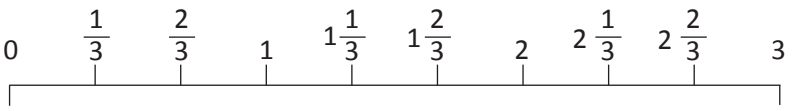
b $\frac{6}{8} - \frac{3}{8} = \frac{\square}{\square}$



c $\frac{11}{4} - \frac{5}{4} = \frac{\square}{\square}$



d $2\frac{1}{3} - \frac{2}{3} = \square\frac{\square}{\square}$



4 **What is $2 - \frac{1}{3}$? Use fractions and words or diagrams to explain your answer:**

5 **Solve these problems:**

a $\frac{3}{5} + \frac{3}{10} = \frac{\square}{\square}$ **b** $\frac{5}{9} + \frac{1}{3} = \frac{\square}{\square}$

Calculating

Name _____

6 **Add these decimal fractions:**

a
$$\begin{array}{r} 3.6 \\ +\ 2.1 \\ \hline \square\square.\square \end{array}$$

b
$$\begin{array}{r} 4.7 \\ +\ 4.4 \\ \hline \square\square.\square \end{array}$$

c
$$\begin{array}{r} 5.12 \\ +\ 1.23 \\ \hline \square\square.\square\square \end{array}$$

d
$$\begin{array}{r} 3.86 \\ +\ 7.15 \\ \hline \square\square.\square\square \end{array}$$

e
$$\begin{array}{r} 2.748 \\ +\ 4.536 \\ \hline \square\square.\square\square\square \end{array}$$

f
$$\begin{array}{r} 37.695 \\ +\ 55.434 \\ \hline \square\square.\square\square\square \end{array}$$

7 **Solve these subtraction problems:**

a
$$\begin{array}{r} \square\square.\square \\ -\ 4.2 \\ \hline \square\square.\square \end{array}$$

b
$$\begin{array}{r} \square\square.\square \\ -\ 13.3 \\ \hline \square\square.\square \end{array}$$

c
$$\begin{array}{r} \square\square.\square \\ -\ 23.4 \\ \hline \square\square.\square \end{array}$$

d
$$\begin{array}{r} \square\square.\square\square \\ -\ 3.27 \\ \hline \square\square.\square\square \end{array}$$

e
$$\begin{array}{r} \square\square.\square\square \\ -\ 4.637 \\ \hline \square\square.\square\square \end{array}$$

f
$$\begin{array}{r} \square\square.\square\square \\ -\ 50.928 \\ \hline \square\square.\square\square \end{array}$$

8 **Solve these problems using a mental or written strategy:**

a Mariska has £7.55 in her piggy bank. She spends £2.65 of this. How much money does she have left?

b Joe has £4.95. His gran gives him £15.25 for mowing the lawns. How much money does he have now?

Skills	Not yet	Kind of	Got it
• Adds fractions with the same denominators			
• Subtracts fractions with the same denominators			
• Adds/subtracts fractions with denominators that are multiples of the same number			
• Subtracts a unit fraction from a whole number			
• Adds decimal numbers to 3 decimal places with renaming			
• Subtracts decimal numbers to 3 decimal places with renaming			

Series F – Fractions, Decimals and Percentages – Student Progress Record

Name_____ Class _____ Date _____

What went well: _____

_____

_____

_____

What I need to improve: _____

_____

_____

_____

Series F – Fractions, Decimals and Percentages – Student Progress Record

Name_____ Class _____ Date _____

What went well: _____

_____

_____

_____

What I need to improve: _____

_____

_____

_____

ASSESSMENT ANSWERS

Pages 10–13

1a $\frac{1}{4}$

b $\frac{3}{4}$

c $\frac{2}{6}$

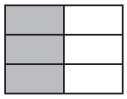
d $\frac{6}{12}$

2a

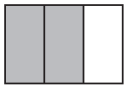
b

c

d



e



3a $\frac{3}{7}$

b $\frac{3}{10}$

c $\frac{5}{6}$

d $\frac{4}{8}$ or $\frac{1}{2}$

4a 3

b 4

c 6

d 8

5a $\frac{3}{4}$

b $\frac{5}{6}$

c $\frac{2}{8}$

d $\frac{3}{12}$

5e $\frac{1}{6}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$ $\frac{9}{12}$

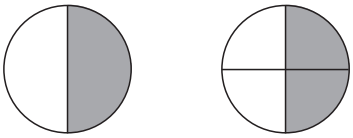
6a false

b true

c true

d false

7 Answers will vary.
Equivalent fractions are the same.
Look at:



They are the same amount.

8a 4

b 2

c 2

9a ✓

b ✗

c ✗

10a true

b false

c false

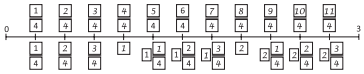
d true

11a true

b false

c true

12



13a $1\frac{2}{4}$

b $\frac{5}{4}$

c $2\frac{3}{4}$

d $\frac{6}{4}$

14a $2\frac{1}{4}$ $\frac{9}{4}$

b $1\frac{3}{6}$ $\frac{9}{6}$

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

Pages 14–15

1a $\frac{4}{10}$; 0.4

b $\frac{7}{10}$; 0.7

2a

b

3a 0.25 $\frac{25}{100}$ or $\frac{1}{4}$

b 0.74 $\frac{74}{100}$

c 0.18 $\frac{18}{100}$

4a This is twenty-five hundredths. It can also be named as two tenths and five hundredths.

b This is seventy-five hundredths. It can also be named as seven tenths and five hundredths.

5a 3.42; 3.4

b 56.65; 56.7

c 0.625; 0.6

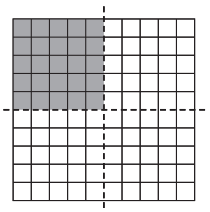
d 352.074; 352.1

Series F – Fractions, Decimals and Percentages

6

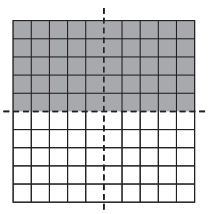
	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
a			4	3	7		
b		8	9	3	5	3	
c				9	7	0	3
d		8	0	0	6	4	2
e				5	2	8	

7a



$\frac{1}{4}$	0.25	25%

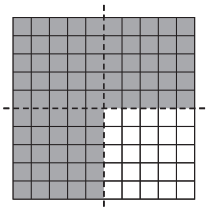
b



$\frac{1}{2}$	0.50	50%

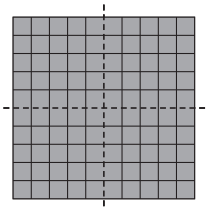
or 0.5

c



$\frac{3}{4}$	0.75	75%

d



$\frac{4}{4}$	1.0	100%

or 1

8a £25

b £25

c £10

Pages 16–17

1a $\frac{3}{4}$

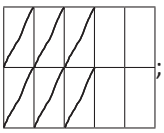
b $\frac{5}{8}$

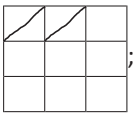
c $\frac{4}{5}$

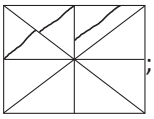
d $\frac{3}{5}$

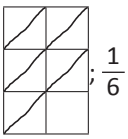
e $\frac{7}{9}$

f $\frac{10}{8}$

2a  ; $\frac{4}{10}$

b  ; $\frac{7}{9}$

c  ; $\frac{5}{8}$

d  ; $\frac{1}{6}$

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

b $\frac{3}{8}$

c $\frac{6}{4}$

d $1\frac{2}{3}$

4 

$2 - \frac{1}{3} = 1\frac{2}{3}$ *or* $\frac{6}{3} - \frac{1}{3} = \frac{5}{3}$

5a $\frac{9}{10}$

b $\frac{2}{9}$

6a

$$\begin{array}{r} 3.6 \\ +\ 2.1 \\ \hline 5.7 \\ \hline \square \end{array}$$

b

$$\begin{array}{r} 4.7 \\ +\ 4.4 \\ \hline 9.1 \\ \hline \boxed{1} \end{array}$$

c

$$\begin{array}{r} 5.12 \\ +\ 1.23 \\ \hline 6.35 \\ \hline \square\ \square \end{array}$$

d

$$\begin{array}{r} 3.86 \\ +\ 7.15 \\ \hline 11.01 \\ \hline \square\ \boxed{1}\ \boxed{1} \end{array}$$

e

$$\begin{array}{r} 2.748 \\ +\ 4.536 \\ \hline 7.284 \\ \hline \boxed{1}\ \square\ \boxed{1} \end{array}$$

f

$$\begin{array}{r} 37.695 \\ +\ 55.434 \\ \hline 93.129 \\ \hline \square\ \boxed{1}\ \boxed{1}\ \square \end{array}$$

7a

$$\begin{array}{r} \square_{7}\ \square_{3} \\ -\ 4.2 \\ \hline 3.1 \end{array}$$

b

$$\begin{array}{r} \square_{5}\ \square_{3}.\square_{7} \\ -\ 13.3 \\ \hline 40.4 \end{array}$$

c

$$\begin{array}{r} \square_{2}\ \boxed{8}\ \boxed{1}.\square_{2} \\ -\ 23.4 \\ \hline 5.8 \end{array}$$

Series F – Fractions, Decimals and Percentages

Pages 16–17

7d

$$\begin{array}{r} \square 7\ .\ \overset{\boxed{2}}{\not 3}\ \overset{\boxed{1}}{4} \\ -\ 3\ .\ 2\ 7 \\ \hline 4\ .\ 0\ 7 \end{array}$$

e

$$\begin{array}{r} \overset{\boxed{8}}{\not 9}\ .\ \overset{\boxed{1}}{5}\ \overset{\boxed{5}}{\not 6}\ \overset{\boxed{1}}{3} \\ -\ 4\ .\ 6\ 3\ 7 \\ \hline 4\ .\ 9\ 2\ 6 \end{array}$$

f

$$\begin{array}{r} \square 7\ \overset{\boxed{1}}{\not 2}\ .\ \overset{\boxed{1}}{6}\ \overset{\boxed{3}}{\not 4}\ \overset{\boxed{1}}{7} \\ -\ 5\ 0\ .\ 9\ 2\ 8 \\ \hline 2\ 1\ .\ 7\ 1\ 9 \end{array}$$

8a

$$\begin{array}{r} \overset{6}{\not 7}\ .\ \overset{1}{5}\ 5 \\ -\ 2\ .\ 6\ 5 \\ \hline £\ 4\ .\ 9\ 0 \end{array}$$ *left*

b

$$\begin{array}{r} 4\ .\ 9\ 5 \\ +\ 1\ 5\ .\ 2\ 5 \\ \hline £\ 2\ 0\ .\ 2\ 0 \\ \hline 1\ 1\ \ 1 \end{array}$$

Series F – Fractions, Decimals and Percentages

Topic	Reference	Strand	Substrand	Objective
Fractions	5F2a	Number	Fractions (including decimals and percentages)	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$).
Fractions	5F2b	Number	Fractions (including decimals and percentages)	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
Fractions	5F3	Number	Fractions (including decimals and percentages)	Compare and order fractions whose denominators are all multiples of the same number.
Fractions, Decimals and Percentages	5F6a	Number	Fractions (including decimals and percentages)	Read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$).
Fractions, Decimals and Percentages	5F6b	Number	Fractions (including decimals and percentages)	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.
Fractions, Decimals and Percentages	5F7	Number	Fractions (including decimals and percentages)	Round decimals with two decimal places to the nearest whole number and to one decimal place.
Fractions, Decimals and Percentages	5F8	Number	Fractions (including decimals and percentages)	Read, write, order and compare numbers with up to three decimal places.
Fractions, Decimals and Percentages	5F10	Number	Fractions (including decimals and percentages)	Solve problems involving number up to three decimal places.
Fractions, Decimals and Percentages	5F11	Number	Fractions (including decimals and percentages)	Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator hundred, and as a decimal fraction.
Fractions, Decimals and Percentages	5F12	Number	Fractions (including decimals and percentages)	Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those with a denominator of a multiple of 10 or 25.