

DECIMALS, FRACTIONS AND PERCENTAGES, BOOK 2

Ordering Fractions, p. 3

1. $\frac{1}{2}, \frac{7}{10}, \frac{3}{4}, \frac{4}{5}, \frac{17}{20}$
2. $\frac{4}{30}, \frac{1}{6}, \frac{1}{3}, \frac{2}{5}, \frac{7}{15}$
3. $\frac{1}{5}, \frac{2}{5}, \frac{4}{9}, \frac{2}{3}, \frac{8}{9}$
4. $\frac{13}{72}, \frac{5}{18}, \frac{2}{9}, \frac{1}{4}, \frac{1}{3}$
5. $\frac{3}{4}, \frac{13}{16}, \frac{7}{8}, \frac{9}{10}$

Guess the Fraction p. 3

1. $\frac{4}{16}$
2. $\frac{3}{5}, \frac{4}{5}$ or $\frac{5}{5}$
3. $\frac{3}{4}$
4. $\frac{4}{20}$
5. $\frac{15}{16}$

Quick Refresher, p. 3

1. 0.5
2. 320
3. 0.32
4. $\frac{4}{5}$
5. 15

Revision – Multiplying and Dividing by Powers of 10, p. 4

- | | |
|--------------|---------------|
| 1. £1,600 | 7. £340 |
| 2. £80 | 8. £423.10 |
| 3. £2,690 | 9. £3,070 |
| 4. £2,376.10 | 10. £3,360.60 |
| 5. £5 | 11. £3 |
| 6. £302 | 12. £660 |
| 1. £39,556 | 5. £77 |
| 2. £1 | 6. £39,501 |
| 3. £360 | 7. £36,200 |
| 4. £47,600 | 8. £4,400,000 |

9. £19,447

11. £367,800

10. £837

12. £8

Review – Converting Decimals to Fractions, p. 5

1. $\frac{38}{100} = \frac{19}{50}$

7. $\frac{14}{100} = \frac{7}{50}$

2. $\frac{4}{1000} = \frac{1}{250}$

8. $\frac{7}{100}$

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

9. $\frac{15}{100} = \frac{3}{20}$

4. $\frac{1}{100}$

10. $\frac{2}{10,000} = \frac{1}{5,000}$

5. $\frac{67}{1000}$

11. $3\frac{5}{100} = 3\frac{1}{20}$

6. $\frac{4}{10} = \frac{2}{5}$

12. $\frac{1}{4}$

Review – Converting Decimals to Percentages

1. 91%

7. 1%

2. 70%

8. 40%

3. 5%

9. 66%

4. 55%

10. 30.5%

5. 14%

11. 2%

6. 80%

12. 34%

Revision – Mixed Problems, p. 6

1. False

2. Gabriella

3. 160 people

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

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

6. 7.5 kg

7. 25ml

8. 2 hundredths

9. 9 units

10. 600m

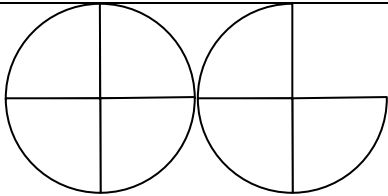
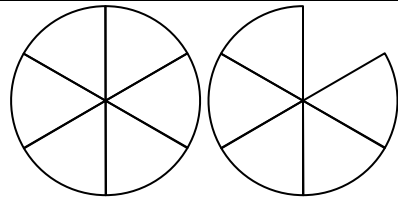
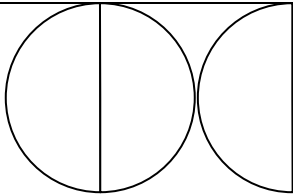
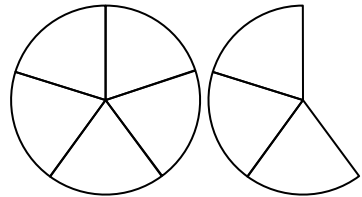
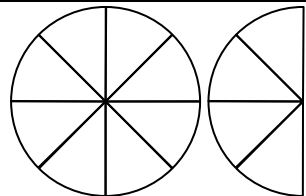
11. 0.4 kg

12. Yes

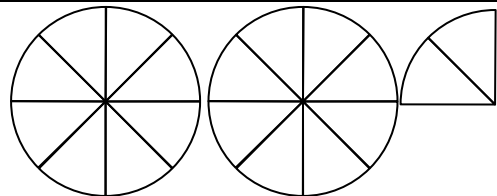
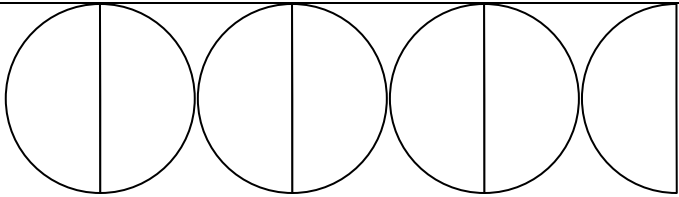
13. 30 kg

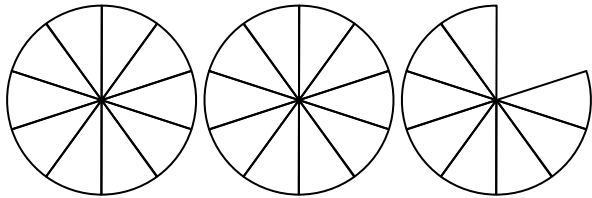
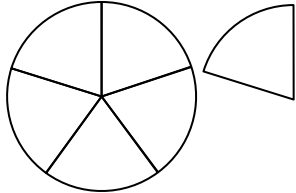
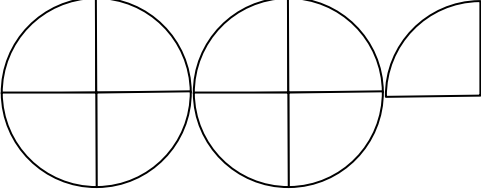
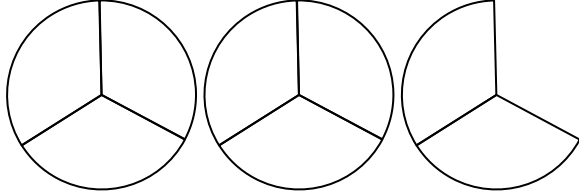
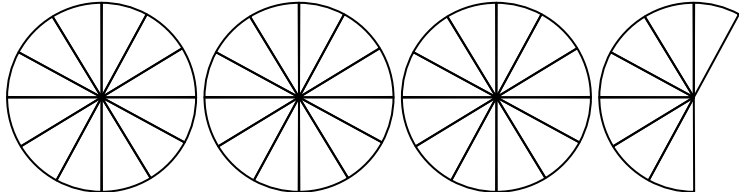
14. 326

Mixed Numbers and Improper Fractions, p. 7

Fraction	Improper Fraction	Mixed Number
	$\frac{7}{4}$	$1\frac{3}{4}$
	$\frac{11}{6}$	$1\frac{5}{6}$
	$\frac{3}{2}$	$1\frac{1}{2}$
	$\frac{8}{5}$	$1\frac{3}{5}$
	$\frac{12}{8} = \frac{3}{2}$	$1\frac{4}{8} = 1\frac{1}{2}$

Page 8

Fraction	Improper Fraction	Mixed Number
	$\frac{18}{8} = \frac{9}{4}$	$2\frac{2}{8} = 2\frac{1}{4}$
	$\frac{7}{2}$	$3\frac{1}{2}$

	$\frac{28}{10} = \frac{14}{5}$	$2\frac{8}{10} = 2\frac{4}{5}$
	$\frac{6}{5}$	$1\frac{1}{5}$
	$\frac{9}{4}$	$2\frac{1}{4}$
	$\frac{8}{3}$	$2\frac{2}{3}$
	$\frac{43}{12}$	$3\frac{7}{12}$

Converting Improper Fractions to Mixed Numbers, p. 9

- $2\frac{4}{7}$
- $3\frac{5}{6}$
- $2\frac{2}{4} = 2\frac{1}{2}$
- $4\frac{1}{2}$
- $6\frac{1}{3}$
- $6\frac{1}{10}$
- $8\frac{1}{4}$
- $8\frac{1}{11}$

Converting Mixed Numbers to Improper Fractions, p. 9

- $\frac{13}{4}$
- $\frac{35}{6}$
- $\frac{32}{3}$
- $\frac{15}{8}$
- $\frac{24}{5}$
- $\frac{17}{2}$
- $\frac{99}{10}$
- $\frac{27}{12}$

Quick Refresher

- 0.24
- £3.73

3. 4.2

4. 42

Mixed Numbers and Improper Fractions – Review, p. 10

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

7. $\frac{17}{6}$

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

8. 3

3. $\frac{119}{20}$

9. $\frac{11}{3}$

4. $\frac{31}{4}$

10. $3\frac{2}{7}$

5. $11\frac{1}{4}$

11. $\frac{33}{4}$

6. $4\frac{1}{3}$

12. $3\frac{2}{10} = 3\frac{1}{5}$

Fractions Problems 1

1. 7 sweets

2. 8 hours

3. $2\frac{1}{8}$

4. $\frac{3}{8}$

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

6. £18

7. 7

8. $\frac{18}{5} = 3\frac{3}{5}$

9. 0.875

10. $\frac{4}{16} = \frac{1}{4}$

Multiplication of Fractions, p. 11

Section 1

1. $\frac{4}{20} = \frac{1}{5}$

2. $\frac{7}{48}$

3. $\frac{4}{21}$

4. $\frac{27}{70}$

5. $\frac{24}{9} = 2\frac{6}{9} = 2\frac{2}{3}$

6. $\frac{3}{160}$

Section 2

1. $\frac{28}{200} = \frac{7}{50}$

2. $\frac{9}{30} = \frac{3}{10}$

3. $\frac{20}{3} = 6\frac{2}{3}$

4. $\frac{21}{40}$

5. $\frac{14}{10} = 1\frac{4}{10} = 1\frac{2}{5}$

6. $\frac{16}{3} = 5\frac{1}{3}$

Division of Fractions, p. 12

Section 1

1. $\frac{70}{72} = \frac{35}{36}$
2. $\frac{4}{12} = \frac{1}{3}$
3. $\frac{5}{2} = 2\frac{1}{2}$
4. $\frac{7}{4} = 1\frac{3}{4}$
5. $\frac{1}{100}$
6. 45

Section 2

1. $\frac{25}{4} = 6\frac{1}{4}$
2. 6
3. $\frac{7}{8}$
4. $\frac{5}{36}$
5. $\frac{1}{4}$
6. $\frac{19}{4} = 4\frac{3}{4}$

Converting Fractions to Percentages (Simple), p. 13

1. 70%
2. 80%
3. 70%
4. 40%
5. 89%
6. 72%
7. 90%
8. 30%
9. 96%
10. 10%
11. 75%
12. 2%

Fractions Problems 2

1. 11
2. 96g
3. Gertrude
4.
 - a) 24cm
 - b) 80cm
5. Kent
6. 26 eighths
7. 5
8. 64%

Multiplication of Fractions with Cross-Cancelling, p. 14

Section 1

1. $\frac{5}{16}$
2. $\frac{1}{2}$
3. $\frac{1}{2}$

4. $\frac{6}{5} = 1\frac{1}{5}$

5. $\frac{1}{16}$

6. $\frac{2}{5}$

Section 2

1. $\frac{1}{9}$

2. $\frac{1}{9}$

3. $\frac{7}{24}$

4. $\frac{5}{16}$

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

6. $\frac{8}{18} = \frac{4}{9}$

Multiplication and Division of Mixed Numbers, p. 15

Section 1 - Multiplication

1. $\frac{4}{15}$

2. $\frac{41}{100}$

3. $\frac{35}{8} = 4\frac{3}{8}$

4. $33\frac{57}{80}$

5. $7\frac{3}{6} = 7\frac{1}{2}$

6. $\frac{3}{2} = 1\frac{1}{2}$

Section 2 - Division

1. $\frac{18}{39} = \frac{6}{13}$

2. $\frac{88}{7} = 12\frac{4}{7}$

3. $\frac{37}{100}$

4. $\frac{39}{20} = 1\frac{19}{20}$

5. $\frac{42}{23} = 1\frac{19}{23}$

6. $\frac{10}{8} = 1\frac{2}{8} = 1\frac{1}{4}$

Mixed Problems 1, p. 16

1.

a) 13.2cm

b) 132mm

2. £85.40

3. $\frac{3}{32}$

4. $\frac{3}{10}$

5. $\frac{2}{3}, \frac{5}{12}, \frac{4}{7}, \frac{5}{9}$

6. 25

Ordering Decimals and Fractions

1. 1.4, 1.404, 4.1, 4.1004, 14.04

2. 0.009, 9%, 0.9, 0.91, 99%

3. 0.0007, 70%, 70.7%, 0.77, 0.775

4. 0.101, 0.115, 0.515, 100%, 1.01

5. 87%, 7.8, 8.7, 8.77008, 8.887

Addition of Fractions, p. 17

Section 1

1. $\frac{17}{20}$

$$2. \quad \frac{7}{12}$$

$$3. \quad 1$$

$$4. \quad \frac{7}{6} = 1\frac{1}{6}$$

$$5. \quad \frac{13}{10} = 1\frac{3}{10}$$

$$6. \quad \frac{13}{15}$$

$$2. \quad \frac{37}{30} = 1\frac{7}{30}$$

$$3. \quad \frac{19}{15} = 1\frac{4}{15}$$

$$4. \quad \frac{47}{60}$$

$$5. \quad \frac{98}{100} = \frac{49}{50}$$

$$6. \quad \frac{17}{20}$$

Section 2

$$1. \quad \frac{67}{40} = 1\frac{27}{40}$$

Subtraction of Fractions, p. 18

Section 1

$$1. \quad \frac{5}{10} = \frac{1}{2}$$

$$2. \quad \frac{1}{8}$$

$$3. \quad \frac{3}{12} = \frac{1}{4}$$

$$4. \quad \frac{11}{18}$$

$$5. \quad \frac{1}{12}$$

$$6. \quad \frac{3}{20}$$

Section 2

$$1. \quad \frac{13}{20}$$

$$2. \quad \frac{61}{100}$$

$$3. \quad \frac{28}{100} = \frac{7}{25}$$

$$4. \quad \frac{33}{60} = \frac{11}{20}$$

$$5. \quad \frac{2}{7}$$

$$6. \quad \frac{7}{50}$$

Addition and Subtraction of Fractions, p. 19

Section 1

$$1. \quad \frac{20}{15} = 1\frac{5}{15} = 1\frac{1}{3}$$

$$2. \quad \frac{31}{36}$$

$$3. \quad \frac{97}{100}$$

$$4. \quad \frac{49}{30} = 1\frac{19}{30}$$

$$5. \quad \frac{45}{28} = 1\frac{17}{28}$$

$$6. \quad \frac{23}{40}$$

Section 2

$$1. \quad \frac{2}{27}$$

$$2. \quad \frac{1}{12}$$

$$3. \quad \frac{5}{18}$$

$$4. \quad \frac{1}{12}$$

$$5. \quad \frac{1}{5}$$

$$6. \quad \frac{11}{30}$$

Fraction Problems 3, p. 20

$$1. \quad \frac{9}{2} = 4\frac{1}{2}$$

$$2. \quad \frac{3}{7}$$

3.

a) 8

b) $\frac{4}{15}$

4. $5\frac{5}{8}$
5. $\frac{9}{4}=2\frac{1}{4}$
6. 17
7. 63
8. 60

Quick Refresher

1. 1.0122
2. 8
3. 3.5
4. $\frac{3}{4}$

Addition and Subtraction of Fractions – Mixed Numbers, p.

21

Section 1

1. $2\frac{2}{5}$
2. $2\frac{1}{12}$
3. $1\frac{3}{5}$
4. $\frac{7}{8}$
5. $2\frac{3}{40}$
6. $6\frac{1}{6}$

Section 2

1. $7\frac{1}{14}$
2. $17\frac{23}{24}$
3. $5\frac{5}{6}$
4. $3\frac{1}{12}$
5. $14\frac{1}{6}$
6. $2\frac{5}{6}$

Review – Addition and Subtraction of Fractions, p. 22

Section 1

1. $\frac{7}{12}$
2. $11\frac{1}{6}$
3. $2\frac{53}{60}$
4. $8\frac{16}{21}$
5. $1\frac{2}{9}$
6. $13\frac{79}{110}$

Section 2

1. $\frac{5}{6}$
2. $7\frac{4}{7}$
3. $2\frac{1}{8}$
4. $2\frac{1}{16}$
5. $3\frac{1}{12}$
6. $7\frac{3}{8}$

Fractions Problems 4, p. 23

1. $\frac{25}{28}$
2. $\frac{5}{12}$
3. $\frac{1}{6}$
4. $2\frac{7}{8}$
5. No
6. $\frac{13}{24}$
7. $\frac{1}{8}$ lb
8. $\frac{7}{40}$

Revision – Decimal Division, p. 24

Section 1

1. 13.16
2. 56.75
3. 3.175
4. 38.26
5. 10.62
6. 12.01

Section 2

1. 12.28
2. 0.342
3. 21.97
4. 27.69
5. 10.69

6. 16.927 or 16.92

Decimal and Percentage Problems, p. 25

1. Virginia Mobile

a) 150

Original Price	Sale Price
£5.00	<i>£4</i>
£10.00	<i>£8</i>
£15.00	<i>£12</i>
£20.00	<i>£16</i>
£25.00	<i>£20</i>
£50.00	<i>£40</i>
£100.00	<i>£80</i>

2.

3. £18.80

a) £5.30

4. £4.35

5.

a) £2.25

b) £25

c) £5

d) £2

6.

a) £2

b) £1.20

c) £5.50

d) £4.50

e) £20

f) £30

7.

- a) £9
- b) £27.50
- c) £250
- d) £75
- e) £165
- f) £30
- g) £37.50
- h) £150
- i) 50p
- j) £150

Quick Refresher

- 1. £27
- 2. 48%
- 3. £3.80
- 4. $\frac{15}{4}$
- 5. $\frac{9}{10}$

Number Lines 1, p. 28

- 1. -3.25 or $-3\frac{1}{4}$
- 2. 20.95 or $20\frac{19}{20}$
- 3.
 - a) $3\frac{2}{20}$ or $3\frac{1}{10}$ or 3.1
 - b) $3\frac{8}{20}$ or $3\frac{2}{5}$ or 3.4
- 4. 2.82 or $2\frac{82}{100}$ or $2\frac{41}{50}$
- 5.
 - a) $10\frac{1}{8}$ or 10.125
 - b) $10\frac{7}{8}$ or 10.875
- 6. 0.098 or $\frac{98}{1000}$ or $\frac{49}{500}$
- 7. 0.175 or $\frac{175}{1000}$ or $\frac{7}{40}$

Decimal Division – Decimal Divisors, pp. 30-31

Section 1

- 1. 54.825

- 2. 15,307. $\dot{3}$

3. 10.71 $\dot{3}$
4. 25,140
5. 99.4
6. 345.4

Section 2

1. 55,920

Section 3

1. 448.09
2. 21,530
3. 395.3 $\dot{6}$
4. 22,618.57
5. 1,328.8
6. 582.2

2. 286.7
3. 122.625
4. 610.4 $\dot{5}$
5. 173.7
6. 121.0 $\dot{3}$

Section 4

1. 2,241.57
2. 448.675
3. 2.3125
4. 13,450
5. 1,530.7
6. 8,397.5

Mixed Problems 2, p. 32

1. Behind target
2. 5
3. 8
4. 3
5.
 - a) 140
 - b) 114
6. 834
7. £109.50
8. £180
9.
 - a) £6.60
 - b) £8.40
10.
 - a) £10.40
 - b) £8

Percentages Revision, p. 33

Section 1

- | | |
|--------|----------|
| 1. 48 | 3. 90 |
| 2. 8.2 | 4. 123.2 |

5. 22.5

6. 5.3

Section 2

1. 67.2

4. 325.6

2. 4.9

5. 19.5

3. 88.5

6. 4.45

Section 3

1. 58.5

4. 510.3

2. 86.4

5. 7.05

3. 197.2

6. 9.5

Section 4

1. 394.4

4. 51.2

2. 35.6

5. 6.75

3. 22.4

6. 14.25

Percentages Problem Solving 1, p. 34

Subjects	Total Possible Marks	Hannah's Scores		Rachel's Scores	
		Mark	Percentage	Mark	Percentage
English	50	39	78%	42	84%
Maths	40	36	90%	34	85%
Chemistry	30	24	80%	24	80%
Biology	40	18	45%	28	70%
Physics	60	42	70%	45	75%

1.

a) Maths

b) Maths

Maths Subjects	Total Possible Marks	Hannah's Scores		Rachel's Scores	
		Mark	Percentage	Mark	Percentage
Arithmetic	60	40	66.6%	50	86.6%
Shape and Measure	50	37	74%	46	92%
Number	25	19	76%	21	84%
Geometry	40	26	65%	25	62.5%
Algebra	40	30	75%	32	80%

2.

a) Number

b) Shape and Measure

Percentages Problem-Solving 2, pp. 35-36

1. 741
2. 15%
3. 16%
4.
 - a) 20%
 - b) 80%
5.
 - a) 25%
 - b) 40%
 - c) 600
6.
 - a) 84
 - b) 36
7.
 - a) 25%
 - b) 70
 - c) 238
 - d) 8.6%

Converting Fractions to Decimals 1, p. 37

Section 1

- | | |
|------------|-----------|
| 1. 3.1 | 5. 5.9 |
| 2. 51.07 | 6. 72.05 |
| 3. 8.7 | 7. 3.1 |
| 4. 109.008 | 8. 10.009 |

Section 2

- | | |
|-----------|------------|
| 1. 6.061 | 7. 2.11 |
| 2. 1.48 | 8. 1.3 |
| 3. 90.3 | 9. 90.85 |
| 4. 33.045 | 10. 32.009 |
| 5. 0.067 | 11. 62.26 |
| 6. 11.105 | 12. 4.0034 |

Ordering Decimals and Fractions 2, p. 38

1. 0.03, 0.0303, $\frac{3}{10}$, 0.303, 33%
2. £2, $\frac{1}{4}$ of £10, £6, £6.60, 677p
3. 44%, 4.04, 40%, 40.4, 44.4
4. $\frac{1}{5}$ m, 0.5m, 5m, 5.05m, 550cm
5. 23%, 0.302, 0.32, $\frac{6}{10}$, $\frac{2}{3}$

Converting Fractions to Decimals, p. 39

	Decimals	Percentages
a. $\frac{1}{5}$	0.2	20%
b. $\frac{3}{20}$	0.15	15%
c. $\frac{5}{8}$	0.625	62.5%
d. $\frac{7}{20}$	0.35	35%
e. $\frac{10}{12}$	0.8 $\dot{3}$	83. $\dot{3}$ %
f. $\frac{3}{8}$	0.375	37.5%
g. $\frac{18}{25}$	0.72	72%
h. $\frac{5}{7}$	0.714	71.4%
i. $\frac{8}{100}$	0.08	8%
j. $\frac{2}{6}$	0. $\dot{3}$	33. $\dot{3}$ %
k. $\frac{5}{6}$	0.8 $\dot{3}$	83. $\dot{3}$ %
l. $\frac{7}{9}$	0. $\dot{7}$	77. $\dot{7}$ %

Inverse Percentages and Fractions, p. 40

Section 1

1. 900
2. 6000
3. 100
4. 500
5. 500
6. 800
7. 500
8. 1000

9. 3500

10. 200

Section 2

1. 2500
2. 2100
3. 2400
4. 2800
5. 8000
6. 300

7. 5400

9. 7900

8. 200

10. 19200

Section 3

1. 40

2. 80

3. 120

4. 110

5. 680

6. 33

7. 492

8. 30

9. 294

10. 1053

Inverse Percentages and Fractions, pp. 42-43

1. 64

2. 200cm

3. 21km

4. £250,000

5. 100 watts

6. 750g

7. 1 hour 20 minutes

8. £180

9. £16

10. 2 litres

11. 54

12. 2m

13. 40

14.

a) 32

b) 48

15.

a) 30

b) 12

c) 9

Missing Number Decimal Multiplication and Division, p. 44

- | | |
|------------|---------------|
| 1. 26.02 | 11. 0.1 |
| 2. 49,400 | 12. 81,940 |
| 3. 10 | 13. 100 |
| 4. 0.1052 | 14. 8.744 |
| 5. 0.01 | 15. 7,343 |
| 6. 96.49 | 16. 0.0000933 |
| 7. 426.9 | 17. 494.1 |
| 8. 0.8552 | 18. x |
| 9. 1000 | 19. 888.5 |
| 10. 0.4078 | 20. 96.66 |

Mixed Problems 3, p. 45

1. $\frac{3}{4}$
2. $\frac{3}{4}$
3. $\frac{5}{16}$
4. $\frac{17}{24}$
5.
 - a) 19.25
 - b) 2.99
6.
 - a) $\frac{3}{5}$
 - b) 400ml
7. 105
8. 134.4cm^2
9. 300ml
10. 40cm

Estimation, p. 46

1. 180,000
2. Between 700 and 750
3. Between 280 and 300
4. Between 45 and 48
5. 4.5
6. 25

7. 100
8. Between 580 and 600
9. 220
10. 500
11. Between 40 and 50
12. Between 900 and 1,080

Ratio and Proportion, p. 47

Section 1

1. 250g
2.
 - a) 240g
 - b) 160g
3. 39kg
4. 14
5. 360g
6.
 - a) 60ml
 - b) 100ml

Section 2

1. 525g
2. 24
3.
 - a) £10
 - b) £24
4. 1 hour 15 mins
5. 75%
6. 22 years old.

$$\begin{array}{ll}
78.96 \div 6 = & 13.16 \\
113.5 \div 2 = & 56.75 \\
25.4 \div 8 = & 3.175 \\
153.02 \div 4 = & 38.255 \\
127.49 \div 12 = & 10.62416667 \\
96.11 \div 8 = & 12.01375 \\
147.38 \div 12 = & 12.28166667 \\
1.71 \div 5 = & 0.342 \\
153.82 \div 7 = & 21.9742857 \\
138.46 \div 5 = & 27.692 \\
32.06 \div 3 = & 10.68666667 \\
169.27 \div 10 = & 16.927
\end{array}$$

$$\begin{array}{ll}
43.86 \div 0.8 = & 54.825 \\
183.68 \div 0.012 = & 15306.66667 \\
96.42 \div 0.09 = & 1071.333333 \\
175.98 \div 0.007 = & 25140 \\
4.97 \div 0.05 = & 99.4 \\
34.54 \div 1 = & 34.54 \\
111.84 \div 0.002 = & 55920 \\
200.69 \div 0.7 = & 286.7 \\
147.15 \div 0.1 = & 1471.5 \\
67.15 \div 0.11 = & 610.4545455 \\
121.59 \div 0.7 = & 173.7 \\
36.31 \div 0.3 = & 121.0333333 \\
49.29 \div 0.11 = & 448.0909091 \\
43.06 \div 0.002 = & 21530 \\
118.61 \div 0.3 = & 395.3666667 \\
158.33 \div 0.007 = & 22618.57143 \\
119.6 \div 0.09 = & 1328.888889 \\
29.11 \div 0.05 = & 582.2 \\
156.91 \div 0.07 = & 2241.571429 \\
179.47 \div 0.4 = & 448.675 \\
1.85 \div 0.8 = & 2.3125 \\
67.25 \div 0.005 = & 13450 \\
153.07 \div 0.1 = & 1530.7 \\
100.77 \div 0.012 = & 8397.5
\end{array}$$