Text *A2 Using Fractions and Percentages* Answers

A2.1 Fractions, Decimals and Percentages

1. (a) $\frac{1}{10}$ (b) $\frac{4}{5}$ (c) $\frac{9}{10}$ (d) $\frac{1}{20}$ (e) $\frac{1}{4}$ (f) $\frac{3}{4}$
   (g) $\frac{7}{20}$ (h) $\frac{19}{50}$ (i) $\frac{1}{25}$ (j) $\frac{3}{25}$ (k) $\frac{41}{50}$ (l) $\frac{37}{50}$

2. (a) 0.32 (b) 0.5 (c) 0.34 (d) 0.2 (e) 0.15 (f) 0.81
   (g) 0.04 (h) 0.03 (i) 0.07 (j) 0.18 (k) 0.75 (l) 0.73

3. (a) 50% (b) 74% (c) 35% (d) 8% (e) 10% (f) 52%
   (g) 80% (h) 7% (i) 4% (j) 18% (k) 40% (l) 30%

4. (a) 50% (b) 70% (c) 20% (d) 75% (e) 10% (f) 90%
   (g) 80% (h) 8% (i) 32% (j) 35% (k) 28% (l) $66\frac{2}{3}\%$

5. (a) $\frac{2}{3} = \frac{10}{15} = \frac{16}{24}$ (b) 17.5% or $17\frac{1}{2}\%$

6. (a) correct drawing (b) 75%

7. (a) 180 m^2 (to the nearest square metre) (b) (i) 120 m^2 (ii) 20 %

A2.2 Fractions and Percentages of Quantities

1. (a) 20 (b) £2.50 (c) £1.60 (d) £2500 (e) £200
   (f) 180 (g) £4 (h) 600 (i) 750 (j) 16 kg
   (k) 3.5 kg (l) 15 kg (m) 5 m (n) 10 m (o) £7.50

2. (a) 32 (b) 90 (c) 18 (d) 90 (e) 120 (f) 150

3. (a) 400 g (or 0.4 kg) (b) 240 g (or 0.24 kg)

4. £3000

5. £25

6. £15 000

7. £6000

8. 360 m

9. £150

10. 9 kg

11. £160

12. 2.4 kg (or 240 g)

13. (a) £5.60 (b) £5 (c) 2.25 metres

© CIMT, Plymouth University

Text *A2 Using Fractions and Percentages* Answers

A2.2

14. (a) \$90 (b) $\frac{1}{6}, \frac{2}{9}, \frac{1}{3}, \frac{5}{6}$

15. 700 students

16. 1400 headphones

17. No. The deposit of $\frac{2}{5}$ is equivalent to 40% of the total price, therefore 30% of the price is not enough to pay the deposit.

A2.3 Quantities as Percentages

1. (a) 16% (b) 12% (c) 40% (d) 30% (e) 12%
   (f) 15% (g) 15% (h) 30% (i) 90% (j) 40%
   (k) 42% (l) 65% (m) 40% (n) 30% (o) 85%

2. 40% of the class are girls and 60% are boys.

3. 20%

4. 8%

5. 56% *Jamaica* supporters and 44% *Trinidad* supporters.

6. 20%

7. 60%

8. 81%

9. 92%

10. $33\frac{1}{3}\%$

11. 4%

12. 80%

13. 45%

14. (a) 40% (b) A (c) 37.5% (d) (i) £110 (ii) £0.88 (or 88 p)

A2.4 Addition and Subtraction of Fractions

1. (a) $\frac{2}{5}$ (b) $\frac{1}{2}$ (c) $\frac{6}{7}$ (d) $\frac{3}{7}$ (e) $\frac{3}{13}$ (f) $\frac{1}{3}$
   (g) $\frac{5}{3}$ (h) $\frac{7}{5}$ (i) $\frac{11}{7}$ (j) $\frac{2}{5}$ (k) $\frac{1}{3}$ (l) $\frac{1}{5}$

2. (a) 14, 29 (b) 6, 5, 11 (c) 2, 3 (d) 10, 13
   (e) 12, 14, 26 (f) 36, 35, 71

© CIMT, Plymouth University

Text *A2 Using Fractions and Percentages* Answers

A2.4

3. (a) $\frac{13}{24}$ (b) $\frac{39}{35}$ (c) $\frac{7}{32}$ (d) $\frac{13}{30}$ (e) $\frac{59}{56}$ (f) $\frac{7}{6}$

   (g) $\frac{17}{70}$ (h) $\frac{47}{24}$ (i) $\frac{32}{21}$ (j) $\frac{1}{14}$ (k) $\frac{13}{44}$ (l) $\frac{1}{2}$

   (m) $\frac{1}{12}$ (n) $\frac{5}{24}$ (o) $\frac{13}{24}$

4. $\frac{11}{15}$ acres

5. £$1\frac{5}{12}$million

6. $\frac{1}{10}$ cm

7. $\frac{17}{30}$

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

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

10. $2\frac{7}{12}$ kg

A2.5 Multiplication and Division of Fractions

1. (a) $\frac{15}{28}$ (b) $\frac{7}{40}$ (c) $\frac{1}{15}$ (d) $\frac{27}{70}$ (e) $\frac{5}{14}$ (f) $\frac{9}{14}$

   (g) $\frac{3}{28}$ (h) $\frac{2}{21}$ (i) $\frac{2}{3}$ (j) 2 (k) $10\frac{5}{12}$ (l) $3\frac{3}{4}$

   (m) $14\frac{2}{5}$ (n) $9\frac{5}{8}$ (o) $30\frac{5}{14}$ (p) $11\frac{11}{28}$ (q) $9\frac{41}{48}$ (r) $1\frac{43}{56}$

2. (a) $1\frac{1}{2}$ (b) $1\frac{1}{7}$ (c) $1\frac{2}{5}$ (d) $\frac{15}{32}$ (e) $\frac{10}{21}$ (f) $4\frac{3}{8}$

   (g) $1\frac{2}{3}$ (h) 22 (i) $\frac{64}{133}$ (j) $3\frac{3}{4}$ (k) $1\frac{1}{13}$ (l) $1\frac{71}{105}$

3. (a) $1\frac{1}{8}$ (b) $\frac{1}{2}$ (c) $6\frac{33}{40}$ (d) $3\frac{1}{5}$

4. $\frac{1}{8}$

© CIMT, Plymouth University

Text *A2 Using Fractions and Percentages* Answers

A2.5

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

6. Volume = $3\frac{3}{8}$ cm^3, Surface area = $13\frac{1}{2}$ cm^2.

7. $4\frac{1}{8}$ litres

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

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

10. 7 cakes

11. $4\frac{1}{2}$ miles per hour

12. 10 items

A2.6 More Complex Percentages

1. (a) £16 (b) £12.45 (c) £5.04 (d) £1.41 (e) £3.59 (f) 69 p

2. (a) £483.48 (b) £1184.74 (c) £15 240 (d) £205.37 (e) £390.60

3. (a) £13.20 (b) £15.38

4. 500 fish

5. $1375

6. (a) £5100 (b) £26 900 (c) £1200 + £2070 = £3270

7. £2254

8. 94 euros 50 cents

9. £150

10. £5.78

11. (a) £41.40 (b) (i) £69 (ii) 945 (iii) £295.80

$$\begin{array}{r} 24 \times \\ \hline 18900 \\ 3780 \\ \hline 22680 \end{array}$$

12. (a) (i) £49.17 (ii) £347.17

(b) (i) £11.67 (£400 – £388.33) (ii) *Berries' Store*

© CIMT, Plymouth University

Text *A2 Using Fractions and Percentages* Answers

A2.7 Percentage Increase and Decrease

1. 21.4%
2. 25%
3. 13.1%
4. 18.9%
5. Kate has a 23.5% saving and John has a 12.7% saving.
6. 40%
7. There is a 10.3% increase in the number of students and a 2.7% increase in the number of teachers. Therefore, class sizes will increase because the number of teachers has not increased at the same rate as the number of students.
8. 25%
9. 25%
10. 4.3% increase, therefore estimated value after another year is $500 640 (using 4.3%)
11. 4.2%
12. Percentage decrease in the value of the IT system is greatest during the first year. (16.7%)
13. (a) £7 (b) (i) £6.49 (ii) It would be £1.99 cheaper. (c) 14.1%
14. (a) £80 (b) 15%
15. 12.5%

A2.8 Compound Interest and Depreciation

1. (a) 1272 euros (b) 1348.32 euros (c) 1605.87 euros
2. (a) £8144.47 (b) £7990.66 (c) £10 021.16
3. C (£51.94 interest)
4. (a) $900 (b) $284.77 (c) $90.10
5. £4608
6. (a) £5600 (b) £45 796
7. £1.78
8. (a) 45.23 million (b) 8 years
9. (a) (i) 3132.04 euros (ii) 52.2% (b) (i) 6264.08 euros (ii) 52.2%
10. (a) £18 000 (b) £571.32

© CIMT, Plymouth University

Text *A2 Using Fractions and Percentages* Answers

A2.9 Reverse Percentage Problems

1. (a) \$608.50 (b) \$100.40
2. £192
3. £3.22
4. £81 200
5. 550 ml
6. DVD player - £320, TV set - £424, Computer - £1480, Calculator - £14.51
7. £9800
8. £500
9. (a) £10.29 (b) £6.58 (c) £3.37
10. £3501.78

© CIMT, Plymouth University