Practice Book *UNIT 11 Fractions and Percentages* Answers

11.1 Fractions, Decimals and Percentages

1. (a) $\dfrac{1}{10}$ (b) $\dfrac{1}{4}$ (c) $\dfrac{1}{100}$ (d) $\dfrac{1}{2}$ (e) $3\dfrac{3}{5}$ (f) $1\dfrac{1}{5}$ (g) $\dfrac{1}{3}$

    (h) $\dfrac{73}{600}$ (i) $\dfrac{11}{125}$ (j) $1\dfrac{5}{8}$

2. (a) 0.2   (b) 0.17   (c) 0.46   (d) 1.01   (e) 2.4   (f) 3.04
    (g) 0.0425 (h) 0.225   (i) 0.182   (j) 0.20125

3. (a) 75%   (b) 16%   (c) 87.5%   (d) 155%   (e) 20%   (f) $33\dfrac{1}{3}\%$

    (g) 50%   (h) $16\dfrac{2}{3}\%$ (i) $166\dfrac{2}{3}\%$ (j) $11\dfrac{1}{9}\%$

4. (a) 20%   (b) 5%   (c) 7.5%   (d) 25.5%   (e) 12%   (f) 0.5%
    (g) 12.3%   (h) 36.5%

5. (a) (i) $\dfrac{9}{25}$ (ii) 0.36   (b) (i) $\dfrac{1}{20}$ (ii) 0.05   (c) (i) $\dfrac{21}{50}$ (ii) 0.42

    (d) (i) $\dfrac{3}{100}$ (ii) 0.03   (e) (i) $1\dfrac{4}{5}$ (ii) 1.18   (f) (i) $2\dfrac{3}{4}$ (ii) 2.75

    (g) (i) $\dfrac{1}{8}$ (ii) 0.125   (h) (i) $\dfrac{99}{100}$ (ii) 0.99

6. (a) 75%   (b) 25%

7. (a) 0.05   (b) $\dfrac{1}{10}$ (c) $1\dfrac{3}{4}$, 1.75   (d) $\dfrac{1}{8}$. 0.125   (e) $\dfrac{41}{250}$, 0.164

    (f) $\dfrac{1}{16}$, 0.0625   (g) $\dfrac{1}{1}$ (1), 1   (h) $1\dfrac{23}{100}$, 1.23

8. (a) 50%   (b) $\dfrac{1}{4}$

9. (a) $\dfrac{2}{6}, \dfrac{6}{18}$ (b) 0.7   (c) 0.3

10.

$\dfrac{1}{2}$	0.5	50%
$\dfrac{7}{10}$	0.7	70%
$\dfrac{3}{100}$	0.03	3%

Answers

11. (a) 0.87   (b)   40%   (c) $\dfrac{3}{10}$ (d)   5 500 000   (e)   45%

12. $\dfrac{3}{10}$

11.2   Fractions and Percentages of Quantities

1. (a) 9   (b) 12   (c) 50   (d) 52.5   (e) 30.1   (f) 1325   (g) 1131
   (h) 2.48   (i) 56   (j) 10

2. (a) 1.375   (b) £1.60   (c) 7   (d) 40.5 g   (e) 9.2   (f) 81 km
   (g) £2000   (h) 15   (i) 60 m   (j) £150

3. 39 000

4. 45 marks

5. 234

6. £29.48

7. £30 000

8. (a) £696   (b) £232   (c) £232

9. (a) 234 boys   (b) 132 girls   (c) 61%

10. (a) 11%   (b) £34 million

11. (a) £11.34   (b) £76.14

12. £1260

13. 64

14. 5

15. (a) 65 p or £0.65   (b) 150

11.3   Quantities as Percentages

1. 10%

2. 8%

3. (a) 70%   (b) 30%

4. 60%

Answers

5. 18.76%

6. 71.43%

7. $6\frac{2}{3}\%$

8. 61.54%

9. (a) English - 87.5%, French - 72%, Mathematics - 75%, Science - 76%, Geography - 84%

    (b) (i) English (ii) French

10. (a) 12   (b) Walk - 6%, Cycle - 3%, Train - 40%, Car - 6%, Bus - 45%.

11. 8 cm (correct to the nearest cm)

12. 5%

13. (a) 31%   (b)   160

11.4 More Complex Percentages

1. A - 840, B - 4680, C - 5040..

2. Monday - 1360, Tuesday - 1576, Wednesday - 1440, Thursday - 1520, Friday - 1488.

3. Rent - 26%, Food - 42%, Clothing - 8%, Travel - 10%, Miscellaneous - 14%.

4. (a) £24 135   (b) £6099

5. (a) £504   (b) £525.60   (c) £539.20   (d) £552   (e) £640

6. (a) $\frac{3}{20}$ (b) 180 boxes   (c) 10%

7. (a) £29.70, £168.30   (b) £119, £476   (c) £112, £1288   (d) £80, £420   (e) £54, £546

8. £6721

9. 11 870 to 11 875

10. 7%

11.5 Percentage Increase and Decrease

1. 14%

2. £33

3. 5%

Answers

4. 14.3%

5. 50%

6. (a) 19%   (b) 75%   (c) 12%   (d) 17%

7. (a) 16%   (b) 37%   (c) 71%   (d) 8%

8. (a) 196.8   (b) £952.50   (c) 44 kg   (d) 1.815 m

9. £7.20

10. £47.15

11. 25% (correct to the nearest 1%)

12. (a) 25%   (b) 20%

13. (a) 2.9%   (b) 5.4%   (c) 4.3%   (d) 7.2% (All correct to 1 d.p.)

14. (a) £450 000   (b) 4% decrease

15. (a) £3   (b) 5%

16. £1.15p

11.6 Addition and Subtraction of Fractions

1. (a) $\dfrac{2}{3}$ (b) $1\dfrac{1}{2}$ (c) $\dfrac{1}{4}$ (d) $1\dfrac{1}{6}$ (e) $\dfrac{13}{24}$ (f) $\dfrac{1}{24}$ (g) $\dfrac{1}{6}$

   (h) $12\dfrac{1}{4}$ (i) $2\dfrac{5}{36}$

2. (a) $\dfrac{1}{6}$ (b) $-\dfrac{1}{30}$ (c) $\dfrac{13}{20}$ (d) $-\dfrac{7}{12}$ (e) $\dfrac{11}{60}$ (f) $1\dfrac{31}{48}$

   (g) $\dfrac{7}{108}$ (h) $1\dfrac{2}{9}$

3. (a) $\dfrac{13}{20}, \dfrac{2}{3}, \dfrac{7}{10}$ (b) $\dfrac{13}{20}, \dfrac{11}{15}, \dfrac{3}{4}$ (c) $\dfrac{37}{45}, \dfrac{5}{6}, \dfrac{13}{15}$ (d) $\dfrac{7}{18}, \dfrac{11}{27}, \dfrac{5}{12}$ (e) $\dfrac{13}{16}, \dfrac{5}{6}, \dfrac{7}{8}$

4. $\dfrac{5}{6}$

5. $\dfrac{9}{10}$

6. $12\dfrac{3}{4}$ m

Answers

7. 8 cookies

8. $\dfrac{2}{5}$, £6

9. $\dfrac{3}{8}$

10. £15

11. $\dfrac{1}{4}$

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

13. $\dfrac{5}{12}$

14. £405

15. (a) $\dfrac{11}{15}$ (b) $\dfrac{3}{10}$

16. $4\dfrac{1}{12}$ pints

17. $\dfrac{13}{20}$

11.7 Multiplication and Division of Fractions

1. (a) $\dfrac{1}{4}$ (b) $\dfrac{1}{6}$ (c) $\dfrac{1}{6}$ (d) $\dfrac{5}{7}$ (e) $\dfrac{1}{18}$ (f) $3\dfrac{1}{3}$ (g) $\dfrac{4}{9}$

   (h) 1   (i) $\dfrac{1}{45}$ (j) $\dfrac{5}{12}$ (k) $\dfrac{3}{20}$ (l) $1\dfrac{1}{2}$

2. (a) 2   (b) $\dfrac{25}{98}$ (c) 5   (d) 3   (e) 4   (f) $\dfrac{4}{5}$ (g) 5

   (h) $3\dfrac{1}{2}$ (i) $\dfrac{2}{3}$

3. (a) 20   (b) 5   (c) 4   (d) $1\dfrac{1}{2}$ (e) $\dfrac{1}{6}$ (f) $1\dfrac{1}{2}$

4. (a) 58   (b) $6\dfrac{3}{8}$ (c) -9   (d) $26\dfrac{3}{5}$ (e) 1   (f) $-4\dfrac{1}{11}$ (g) $1\dfrac{1}{2}$

   (h) 275

Answers

5. (a) $\dfrac{1}{4}$ (b) $\dfrac{6}{7}$ (c) $\dfrac{2}{81}$ (d) $\dfrac{27}{32}$ (e) $2\dfrac{2}{3}$ (f) $\dfrac{1}{2}$ (g) $1\dfrac{17}{27}$

    (h) $3\dfrac{1}{5}$

6. $15\,541\dfrac{2}{3}$ km

7. $\dfrac{1}{4}$ kg

8. (a) $3\dfrac{29}{35}$ (b) $\dfrac{6}{35}$

11.8 Compound Interest and Depreciation

1. (a) £252   (b) £264.60   (c) £390.93

2. (a) £734.66   (b) £1659.04   (c) £9469.45

3. (a) £6144   (b) £2516.58

4. 15 years

5. (a) £40.80   (b) £41.62   (c) £44.16   (d) £48.76

6. (a) £9600   (b) £8640   (c) £6298.56

7. (a) £300   (b) £1001.33

8. £3650

9. (a) 3573.04 or 3573.05   (b) 7.2%

11.9 Reverse Percentage Problems

1. £1800

2. £400

3. £524.25

4. £3.60, 45p

5. £800, $31\dfrac{1}{4}$%

6. £15 000

11.9

Answers

7. £140

8. A gain of £8100

9. £425, 20% gain

10. (a) £8.75   (b) 6.7143   (c) 6.2632

11. £240

12. £220