Practice Book   *UNIT 17   Arithmetic: Decimals*   Answers
Fractions and Percentages

17.1 Conversion: Decimals into Fractions

1. (a) $\dfrac{7}{10}$ or 7 tenths   (b) $\dfrac{7}{100}$ or 7 hundredths   (c) 7 units

    (d) $\dfrac{7}{1000}$ or 7 thousandths (e) $\dfrac{7}{100}$ or 7 hundredths   (f) $\dfrac{7}{1000}$ or 7 thousandths

2. (a) 0.106, 0.16, 0.601, 0.61, 0.616, 0.661
    (b) 0.28, 0.4, 0.47, 0.78, 0.82
    (c) 0.2, 0.23, 0.3, 0.301, 0.32
    (d) 0.17, 0.19, 0.79, 0.9, 0.91

3. (a) $\dfrac{1}{10}$ (b) $\dfrac{9}{10}$ (c) $\dfrac{3}{10}$ (d) $\dfrac{7}{100}$

    (e) $\dfrac{1}{4}$ (f) $\dfrac{1}{1000}$ (g) $\dfrac{1}{20}$ (h) $\dfrac{3}{1000}$

    (i) $\dfrac{17}{1000}$ (j) $\dfrac{71}{100}$ (k) $\dfrac{87}{100}$ (l) $\dfrac{210}{1000}$

4. (a) $\dfrac{2}{5}$ (b) $\dfrac{2}{25}$ (c) $\dfrac{27}{50}$ (d) $\dfrac{3}{500}$

    (e) $\dfrac{3}{250}$ (f) $\dfrac{81}{500}$ (g) $\dfrac{6}{125}$ (h) $\dfrac{21}{25}$

    (i) $\dfrac{41}{125}$ (j) $\dfrac{7}{500}$ (k) $\dfrac{1}{125}$ (l) $\dfrac{27}{250}$

5. (a) 3   (b) 7   (c) 9
    (d) 1   (e) 3   (f) 2

6. (a) $\dfrac{6}{5}$ or $1\dfrac{1}{5}$ (b) $\dfrac{151}{50}$ (c) $\dfrac{103}{25}$

    (d) $\dfrac{181}{50}$ (e) $\dfrac{501}{125}$ (f) $\dfrac{1003}{200}$

7. (a) 1.3 or $1\dfrac{3}{10}$ (b) 0.5 or $\dfrac{1}{2}$ (c) 1.33 or $1\dfrac{33}{100}$ (d) 7.9 or $7\dfrac{9}{10}$

    (e) 0.36 or $\dfrac{9}{25}$ (f) 1.91 or $1\dfrac{91}{100}$ (g) 7.86 or $7\dfrac{43}{50}$ (h) 0.418 or $\dfrac{209}{500}$

17.1   Answers

8.   (a)   0.61 or $\dfrac{61}{100}$ (b)   00.11 or $\dfrac{11}{100}$ (c)   0.44 or $\dfrac{11}{25}$ (d)   0.34 or $\dfrac{17}{50}$

9.   (a) $\dfrac{1}{10\,000}$ (b) $\dfrac{9}{10\,000}$ (c) $\dfrac{21}{100\,000}$ (d) $\dfrac{123491}{1\,000\,000}$

10. (a) $\dfrac{8}{100\,000} = \dfrac{1}{12\,500}$ (b) $\dfrac{2222}{100\,000} = \dfrac{1111}{50\,000}$ (c) $\dfrac{102}{100\,000} = \dfrac{51}{50\,000}$

     (d) $\dfrac{4}{1\,000\,000} = \dfrac{1}{250\,000}$ (e) $\dfrac{224}{1\,000\,000} = \dfrac{7}{31250}$ (f) $\dfrac{2}{10\,000\,000} = \dfrac{1}{5\,000\,000}$

17.2 Conversion: Fractions into Decimals

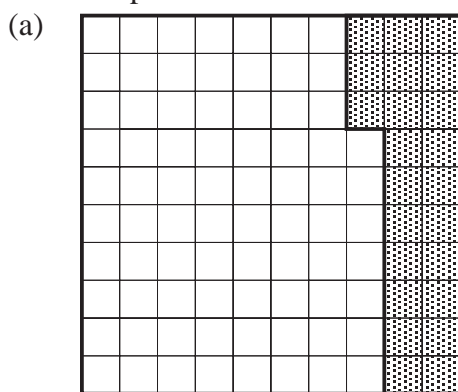1.   (a)   0.3   (b)   0.07   (c)   0.009   (d)   0.13
     (e)   0.131   (f)   0.047   (g)   0.21   (h)   0.183
     (i)   0.19   (j)   0.019   (k)   0.11   (l)   0.81

2.   (a)   1   (b)   7   (c)   2   (d)   1
     (e)   50   (f)   500   (g)   25   (h)   25

3.   (a)   0.5   (b)   0.8   (c)   0.18   (d)   0.12
     (e)   0.15   (f)   0.006   (g)   0.004   (h)   0.35
     (i)   0.305   (j)   0.72   (k)   0.072   (l)   0.25

4.   (a)   1.2   (b)   2.12   (c)   5.218
     (d)   20.08   (e)   2.008   (f)   41.8

5.   (a)   3.5   (b)   1.05   (c)   1.65
     (d)   1.24   (e)   3.2   (f)   2.002

6.   (a) $\dfrac{3}{5}$ or 0.6   (b) $\dfrac{3}{8}$ or 0.375   (c) $\dfrac{25}{4}$ or 6.25

     (d) $\dfrac{16}{5}$ or 3.2   (e) $\dfrac{13}{2}$ or 6.5   (f) $\dfrac{15}{4}$ or 3.75

7.   (a)   0.875   (b)   0.875

8.   (a)   8.2   (b)   8.2

9.   0.125

10. 0.8125

Answers

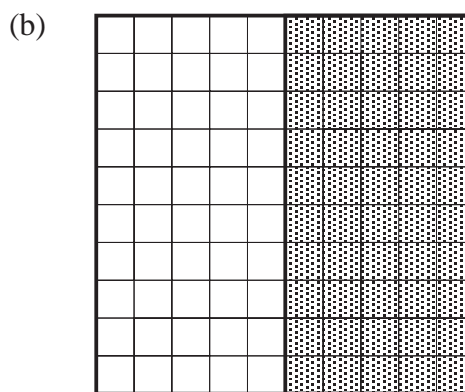## 17.3 Introduction to Percentages

1. (a) 47%   (b) 36%   (c) 28%

    (d) 30%   (e) 80%   (f) 75%

2. (a) 53%   (b) 64%   (c) 72%
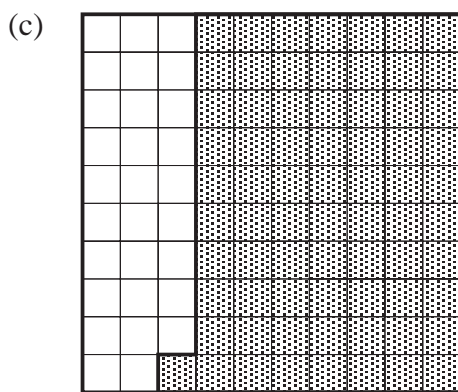
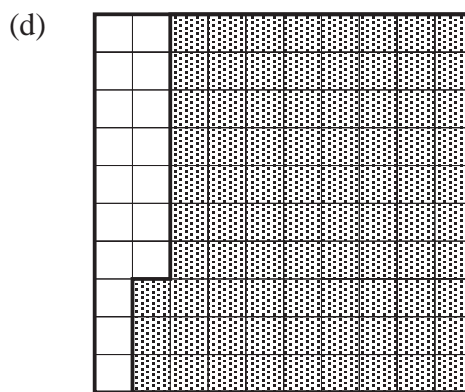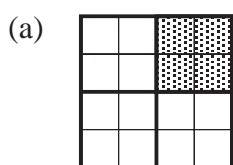   (d) 70%   (e) 20%   (f) 25%

3. 24%

4. For example:

    (a)

    23% shaded

    (b)

    50% shaded

    (c)

    79% shaded

    (d)
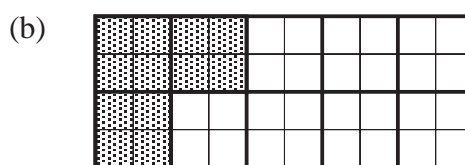
    87% shaded

5. For example:

    (a)

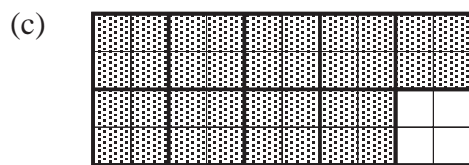   25% shaded

    (b)

    30% shaded

17.3   Answers
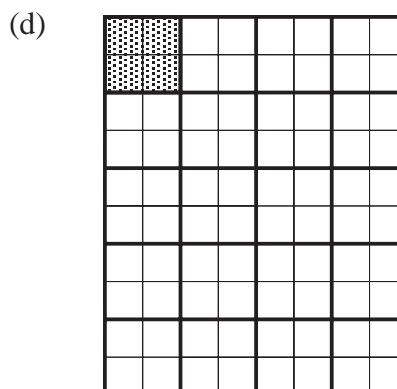
(c)

90% shaded
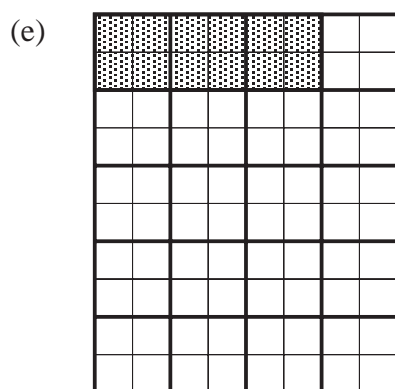
(d)

5% shaded
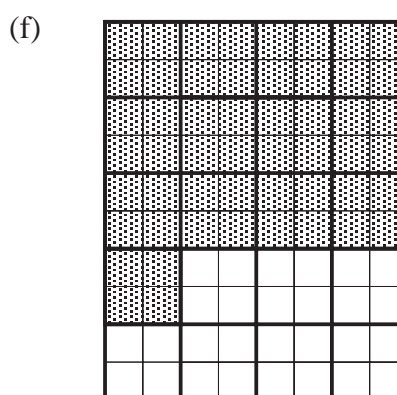
(e)

15% shaded

(f)

65% shaded

6. (a) 90%   (b) 70%   (c) 55%   (d) 95%

    (e) 80%   (f) 60%   (g) 75%

7. 65%

8. 12%

9. (a) £100   (b) 150 kg   (c) 30p   (d) 10p   (e) 1.5 kg

    (f) 30 m   (g) £8   (h) 52p   (i) £60   (j) 150 kg

10. (a) 40%   (b) Adam: £15; Ben: £10   (c) Adam: £18; Ben: £12

17.4 Decimals, Fractions and Percentages

1. (a) 0.42   (b) 0.37   (c) 0.2   (d) 0.05   (e) 0.08

    (f) 0.1   (g) 0.22   (h) 0.03   (i) 0.15

2. (a) 14%   (b) 72%   (c) 55%   (d) 40%   (e) 3%

    (f) 90%   (g) 18%   (h) 4%   (i) 70%

17.4

Answers

3. (a) $\dfrac{1}{2}$ (b) $\dfrac{3}{10}$ (c) $\dfrac{4}{5}$ (d) $\dfrac{7}{10}$ (e) $\dfrac{3}{20}$

    (f) $\dfrac{1}{4}$ (g) $\dfrac{16}{25}$ (h) $\dfrac{49}{50}$ (i) $\dfrac{14}{25}$

4. (a) 7%   (b) 18%   (c) 6%

    (d) 34%   (e) 15%   (f) 28%

    (g) 60%   (h) 70%   (i) 75%

    (j) 5%   (k) 50%   (l) 12%

5.

Fraction	Decimal	Percentage
$\dfrac{1}{25}$	0.04	4%
$\dfrac{1}{10}$	0.1	10%
$\dfrac{1}{2}$	0.5	50%
$\dfrac{9}{20}$	0.45	45%
$\dfrac{7}{50}$	0.14	14%
$\dfrac{21}{25}$	0.84	84%

6. (a) $\dfrac{124}{200}$ or $\dfrac{31}{50}$ (b) 62%   (c) 38%

7. 10%

8. (a) 75%   (b) 10%   (c) 15%

9. (a) 24%   (b) $\dfrac{24}{100}$ or $\dfrac{6}{25}$

10. (a) 35%   (b) 25%   (c) 75%

    (d) $\dfrac{4}{10}$ or $\dfrac{2}{5}$ (e) $\dfrac{1}{4}$ (f) $\dfrac{3}{4}$