UNIT 10 *Arithmetic: Fractions*   **Extra Exercises 10.1**

1.   What fraction of each of these shapes has been shaded?

(a)

(b)

(c)
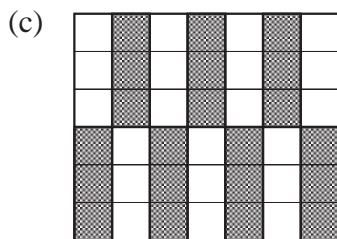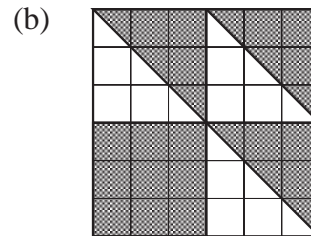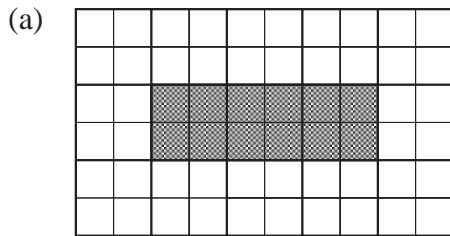
2.   Shade the stated fraction of each shape:

(a) $\frac{4}{7}$

(b) $\frac{3}{5}$

(c) $\frac{7}{15}$

(d) $\frac{8}{21}$

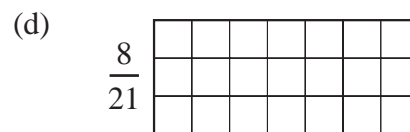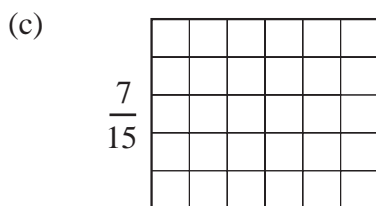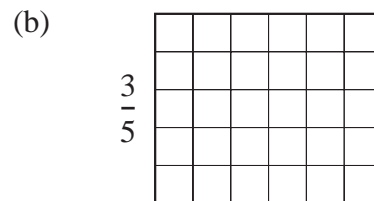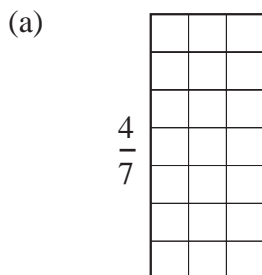   What fraction of each shape has *not* been shaded?

3.   Make 4 copies of this rectangle:

        Shade:

        (a) $\frac{2}{7}$ (b) $\frac{3}{5}$

        (c) $\frac{7}{10}$ (d) $\frac{5}{14}$

UNIT 10 *Arithmetic: Fractions*   **Extra Exercises 10.2**

1. Copy these equations and fill in the missing numbers:

(a) $\dfrac{2}{3} = \dfrac{?}{6}$

(b) $\dfrac{5}{7} = \dfrac{?}{14}$

(c) $\dfrac{3}{7} = \dfrac{?}{28}$

(d) $\dfrac{8}{22} = \dfrac{?}{11}$

(e) $\dfrac{6}{18} = \dfrac{?}{3}$

(f) $\dfrac{8}{18} = \dfrac{?}{9}$

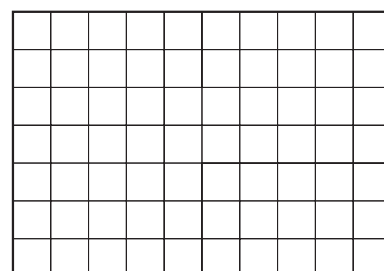(g) $\dfrac{28}{100} = \dfrac{?}{25}$

(h) $\dfrac{42}{72} = \dfrac{?}{12}$

(i) $\dfrac{18}{54} = \dfrac{?}{3}$

2. Write out each of these pairs of fractions, inserting either $<$, $>$ or $=$ between each fraction to make each statement correct:

(a) $\dfrac{4}{7}$ $\dfrac{4}{9}$

(b) $\dfrac{3}{12}$ $\dfrac{1}{4}$

(c) $\dfrac{1}{8}$ $\dfrac{1}{7}$

(d) $\dfrac{3}{15}$ $\dfrac{5}{9}$

(e) $\dfrac{3}{12}$ $\dfrac{4}{16}$

(f) $\dfrac{2}{6}$ $\dfrac{2}{7}$

(g) $\dfrac{5}{8}$ $\dfrac{5}{9}$

(h) $\dfrac{6}{7}$ $\dfrac{5}{6}$

(i) $\dfrac{1}{2}$ $\dfrac{14}{29}$

3. Write each of these fractions in the simplest possible form:

(a) $\dfrac{20}{60}$

(b) $\dfrac{15}{45}$

(c) $\dfrac{12}{36}$

(d) $\dfrac{10}{50}$

(e) $\dfrac{14}{21}$

(f) $\dfrac{6}{14}$

(g) $\dfrac{14}{18}$

(h) $\dfrac{1}{13}$

(i) $\dfrac{13}{52}$

UNIT 10 *Arithmetic: Fractions*   **Extra Exercises 10.3**

1.   Calculate:

   (a) $\dfrac{1}{2}$ of 18   (b) $\dfrac{1}{4}$ of 20   (c) $\dfrac{1}{3}$ of 6

   (d) $\dfrac{1}{7}$ of 21   (e) $\dfrac{1}{8}$ of 24   (f) $\dfrac{1}{5}$ of 40

   (g) $\dfrac{1}{10}$ of 120   (h) $\dfrac{1}{12}$ of 24   (i) $\dfrac{1}{7}$ of 56

2.   Calculate:

   (a) $\dfrac{2}{3}$ of 6   (b) $\dfrac{4}{5}$ of 15   (c) $\dfrac{3}{7}$ of 14

   (d) $\dfrac{3}{4}$ of 36   (e) $\dfrac{5}{7}$ of 14   (f) $\dfrac{6}{7}$ of 21

   (g) $\dfrac{5}{9}$ of 45   (h) $\dfrac{3}{11}$ of 22   (i) $\dfrac{5}{16}$ of 32

3.   A car park is said to be $\dfrac{3}{4}$ full. How many cars are there in the car park if it holds:
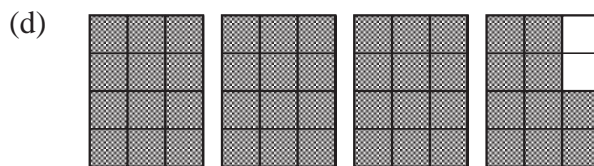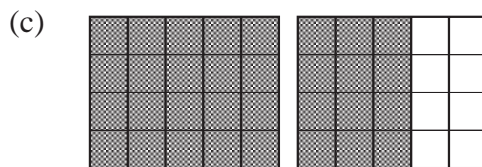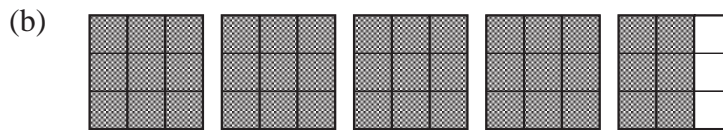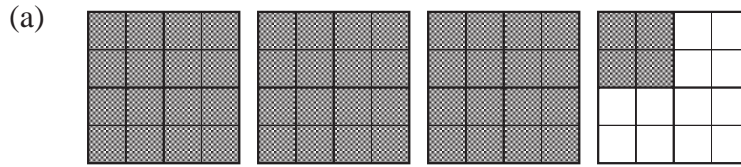
   (a)   40 cars,   (b)   100 cars,   (c)   120 cars   (d)   72 cars?

UNIT 10 *Arithmetic: Fractions*   **Extra Exercises 10.4**

1. For each of these diagrams, write the number represented as a mixed number and also as an improper fraction:

    (a)

    (b)

    (c)

    (d)

2. Convert these mixed numbers to improper fractions:

    (a) $4\dfrac{1}{2}$ (b) $2\dfrac{3}{4}$ (c) $6\dfrac{1}{2}$

    (d) $5\dfrac{1}{4}$ (e) $1\dfrac{4}{5}$ (f) $2\dfrac{2}{7}$

    (g) $4\dfrac{3}{7}$ (h) $2\dfrac{7}{9}$ (i) $6\dfrac{2}{5}$

3. Convert these improper fractions to mixed numbers:

    (a) $\dfrac{11}{2}$ (b) $\dfrac{10}{3}$ (c) $\dfrac{10}{7}$

    (d) $\dfrac{11}{9}$ (e) $\dfrac{12}{5}$ (f) $\dfrac{8}{7}$

    (g) $\dfrac{15}{8}$ (h) $\dfrac{15}{9}$ (i) $\dfrac{16}{3}$

Extra Exercises 10.1

Answers

1. (a) $\dfrac{3}{15} = \dfrac{1}{5}$

    (b) $\dfrac{5}{8}$

    (c) $\dfrac{7}{14} = \dfrac{1}{2}$

2. (a) $\dfrac{3}{7}$ unshaded

    (b) $\dfrac{2}{5}$ unshaded

    (c) $\dfrac{8}{15}$ unshaded

    (d) $\dfrac{13}{21}$ unshaded

Extra Exercises 10.2   Answers

1. (a) $\dfrac{2}{3} = \dfrac{4}{6}$ (b) $\dfrac{5}{7} = \dfrac{10}{14}$ (c) $\dfrac{3}{7} = \dfrac{12}{28}$

   (d) $\dfrac{8}{22} = \dfrac{4}{11}$ (e) $\dfrac{6}{18} = \dfrac{1}{3}$ (f) $\dfrac{8}{18} = \dfrac{4}{9}$

   (g) $\dfrac{28}{100} = \dfrac{7}{25}$ (h) $\dfrac{42}{72} = \dfrac{7}{12}$ (i) $\dfrac{18}{54} = \dfrac{1}{3}$

2. (a) $\dfrac{4}{7} > \dfrac{4}{9}$ (b) $\dfrac{3}{12} = \dfrac{1}{4}$ (c) $\dfrac{1}{8} < \dfrac{1}{7}$

   (d) $\dfrac{3}{15} < \dfrac{5}{9}$ (e) $\dfrac{3}{12} = \dfrac{4}{16}$ (f) $\dfrac{2}{6} > \dfrac{2}{7}$

   (g) $\dfrac{5}{8} > \dfrac{5}{9}$ (h) $\dfrac{6}{7} > \dfrac{5}{6}$ (i) $\dfrac{1}{2} > \dfrac{14}{29}$

3. (a) $\dfrac{1}{3}$ (b) $\dfrac{1}{3}$ (c) $\dfrac{1}{3}$

   (d) $\dfrac{1}{5}$ (e) $\dfrac{2}{3}$ (f) $\dfrac{3}{7}$

   (g) $\dfrac{7}{9}$ (h) $\dfrac{1}{13}$ (i) $\dfrac{1}{4}$

Extra Exercises 10.3

Answers

1. (a) 9   (b) 5   (c) 2

    (d) 3   (e) 3   (f) 8

    (g) 12   (h) 2   (i) 8

2. (a) 4   (b) 12   (c) 6

    (d) 27   (e) 10   (f) 18

    (g) 25   (h) 6   (i) 10

3. (a) 30   (b) 75   (c) 90   (d) 54

Extra Exercises 10.4   Answers

1. (a) $3\dfrac{1}{4} = \dfrac{13}{4}$ (b) $4\dfrac{2}{3} = \dfrac{14}{3}$ (c) $1\dfrac{3}{5} = \dfrac{8}{5}$ (d) $3\dfrac{5}{6} = \dfrac{23}{6}$

2. (a) $\dfrac{9}{2}$ (b) $\dfrac{11}{4}$ (c) $\dfrac{13}{2}$

   (d) $\dfrac{21}{4}$ (e) $\dfrac{9}{5}$ (f) $\dfrac{16}{7}$

   (g) $\dfrac{31}{7}$ (h) $\dfrac{25}{9}$ (i) $\dfrac{32}{5}$

3. (a) $5\dfrac{1}{2}$ (b) $3\dfrac{1}{3}$ (c) $1\dfrac{3}{7}$

   (d) $1\dfrac{2}{9}$ (e) $2\dfrac{2}{5}$ (f) $1\dfrac{1}{7}$

   (g) $1\dfrac{7}{8}$ (h) $1\dfrac{6}{9} = 1\dfrac{2}{3}$ (i) $5\dfrac{1}{3}$