

Chapter 11

Fractions



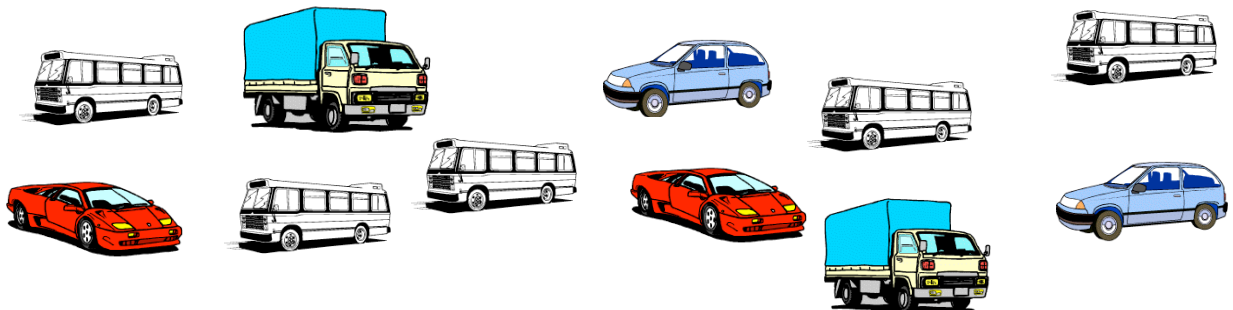
Exercise 1

1. For each of the following, write the fraction that is shaded :-

(a) (b) (c) (d) (e) (f) (g) (h) (i) (j)

2. For each shape in question 1, write the fraction that is **not** shaded.

3. Look at the pictures shown below.



- (a) How many vehicles in total are in the picture ?
- (b) Write down what fraction of the vehicles are :-
- (i) cars (ii) buses (iii) trucks (iv) not trucks.

4. (a) (i) Draw a rectangle in your jotter measuring 6 boxes by 2 boxes.
 (ii) Shade or colour in $\frac{1}{3}$ (one box for every three).
- (b) Repeat part (a), except shade $\frac{1}{4}$ of the rectangle.

5. What fraction of rooms in your house have a toilet in them ?



Exercise 2



1. Divide the top line and bottom line of each fraction by 2, to simplify each :-

(a) $\frac{2}{4}$ (b) $\frac{6}{8}$ (c) $\frac{10}{12}$ (d) $\frac{2}{20}$ (e) $\frac{32}{42}$ (f) $\frac{100}{102}$

2. Divide the top line and bottom line of each fraction by 3, to simplify each :-

(a) $\frac{3}{6}$ (b) $\frac{9}{12}$ (c) $\frac{15}{21}$ (d) $\frac{33}{36}$ (e) $\frac{60}{63}$ (f) $\frac{12}{45}$

3. For each of the following fractions, divide the numerator and the denominator by a number to simplify the fraction :-

(a) $\frac{5}{10}$ (b) $\frac{3}{18}$ (c) $\frac{4}{20}$ (d) $\frac{2}{30}$ (e) $\frac{3}{21}$ (f) $\frac{6}{18}$
 (g) $\frac{10}{30}$ (h) $\frac{2}{200}$ (i) $\frac{12}{15}$ (j) $\frac{3}{36}$ (k) $\frac{2}{50}$ (l) $\frac{5}{120}$

4. (Harder) Simplify :-

(a) $\frac{7}{35}$ (b) $\frac{11}{77}$ (c) $\frac{18}{21}$ (d) $\frac{7}{63}$ (e) $\frac{13}{39}$ (f) $\frac{17}{51}$

Exercise 3



1. Find :-

(a) $\frac{1}{2}$ of 20 (b) $\frac{1}{3}$ of 15 (c) $\frac{1}{2}$ of 50
 (d) $\frac{1}{3}$ of 27 (e) $\frac{1}{4}$ of 20 (f) $\frac{1}{5}$ of 55
 (g) $\frac{1}{2}$ of 42 (h) $\frac{1}{5}$ of 60 (i) $\frac{1}{6}$ of 42

2. Find :-

(a) $\frac{1}{6}$ of 54 (b) $\frac{1}{7}$ of 49 (c) $\frac{1}{8}$ of 40
 (d) $\frac{1}{9}$ of 54 (e) $\frac{1}{7}$ of 91 (f) $\frac{1}{8}$ of 72
 (g) $\frac{1}{10}$ of 30 (h) $\frac{1}{10}$ of 900 (i) $\frac{1}{15}$ of 30

3. (a) There are 60 people on an aeroplane. $\frac{1}{3}$ of them are children.

How many children are on the aeroplane ?



(b) There are 32 trees in an orchard.

$\frac{1}{4}$ of the trees are apple trees.

(i) How many trees are apple trees ?

(ii) How many trees are not apple trees ?



4. One fifth of the thirty children on a bus are girls.

(a) How many girls are in the group ?

(b) How many boys are in the group ?



5. A drinks cooler contains 36 bottles.

A third of the bottles are Cola.

A quarter of the bottles are Orange.

A sixth of the bottles are Irn Bru.

A ninth of the bottles are water.

The rest are beer.

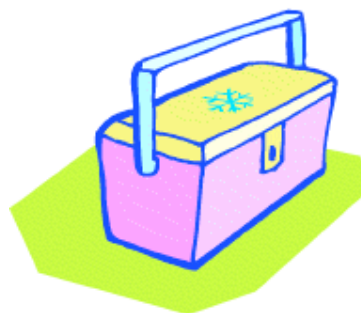
Find, the number of bottles of :-

(a) Cola

(b) Orange

(c) Irn Bru

(d) beer.



Exercise 4



1. Without using a calculator, do the following :-

(a) $\frac{2}{3}$ of 15 = $(15 \div 3) \Rightarrow 5 \times 2 = \dots$

(b) $\frac{2}{3}$ of 27

(c) $\frac{3}{4}$ of 24

(d) $\frac{3}{4}$ of 36

(e) $\frac{2}{5}$ of 20

(f) $\frac{3}{5}$ of 40

(g) $\frac{2}{7}$ of 21

(h) $\frac{4}{5}$ of 60

(i) $\frac{5}{6}$ of 30

(j) $\frac{7}{9}$ of 81

2. A computer room contained 32 computers.

$\frac{3}{4}$ of the computers were shut down.

How many computers were shut down ?



3. At the school raffle 95 tickets were sold.

Two fifths of the tickets won a prize.

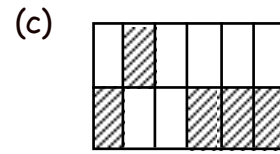
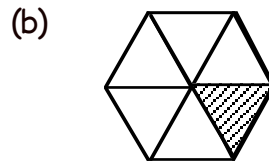
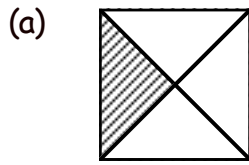
How many tickets did not win ?



Revision Exercise



1. For each shape, say what fraction has been shaded :-



2. For each shape in question 1, write down the fraction not shaded.

3. Copy and complete :-

(a) $\frac{1}{2} = \frac{?}{8}$

(b) $\frac{2}{3} = \frac{6}{?}$

(c) $\frac{6}{11} = \frac{?}{77}$

4. Write an equivalent fraction to :-

(a) $\frac{1}{2}$

(b) $\frac{1}{5}$

(c) $\frac{2}{3}$

5. Write each of these fractions in their simplest form :-

(a) $\frac{8}{16}$

(b) $\frac{3}{15}$

(c) $\frac{7}{21}$

(d) $\frac{11}{55}$

(e) $\frac{14}{42}$

(f) $\frac{10}{200}$

6. Find :-

(a) $\frac{1}{2}$ of £30

(b) $\frac{1}{3}$ of 60 kg

(c) $\frac{1}{4}$ of 48 ml

(d) $\frac{1}{5}$ of €25

(e) $\frac{1}{7}$ of \$49

(f) $\frac{1}{12}$ of 24 g

7. Angela had £24 in her bank.
She spent half of her money paying her mobile phone bill and a quarter of her money on paying bank charges.

- (a) How much was Angela's phone bill ?
 (b) How much did she pay in bank charges ?
 (c) How much does she have left in her account ?



8. Find :-

(a) $\frac{2}{3}$ of £24

(b) $\frac{3}{4}$ of 36 litres

(c) $\frac{5}{8}$ of 56 p