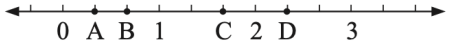
Fraction on a Number line

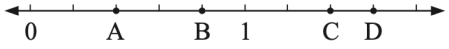
1 Find number fractions (rational numbers) represented by points A, B, C and D on the number lines:

a

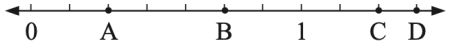
b



c



d



2 Draw number line graphs for the following sets of fractions:

a $\frac{1}{3}, 1\frac{2}{3}, \frac{7}{3}$ **b** $\frac{2}{5}, \frac{4}{5}, 1\frac{2}{5}$ **c** $\frac{1}{6}, \frac{5}{6}, 1\frac{1}{6}$

d $\frac{1}{8}, \frac{3}{8}, \frac{7}{8}, 1\frac{1}{8}$ **e** $\frac{1}{12}, \frac{5}{12}, \frac{7}{12}, \frac{13}{12}$

Comparing Fractions using common denominators

1 Write each set of fractions with the lowest common denominator and hence write the original fractions in order of size (large to small):

a $\frac{2}{3}, \frac{3}{4}$ **b** $\frac{5}{9}, \frac{4}{7}$ **c** $\frac{1}{4}, \frac{2}{7}$ **d** $\frac{5}{6}, \frac{4}{5}$

e $\frac{3}{5}, \frac{2}{3}$ **f** $\frac{5}{8}, \frac{7}{10}$ **g** $\frac{8}{12}, \frac{6}{9}$ **h** $\frac{4}{5}, \frac{3}{4}$

i $\frac{7}{11}, \frac{5}{8}$ **j** $\frac{7}{9}, \frac{3}{4}$

3 Ivana allocates her pay in the following way:
$\frac{5}{12}$ for bills, $\frac{3}{8}$ for savings and $\frac{5}{24}$ for spending.
Arrange the allocation from most to least.

4 In a netball team, Maria scores $\frac{1}{4}$, Rosie scores $\frac{5}{16}$ and Kate scores $\frac{9}{32}$ of the goals.

a Arrange the goal scorers from highest to lowest.

b What fraction of the team's goals was not scored by any of these three players?

Word Problem solving

1 Find the sum of $\frac{2}{3}$ and $\frac{3}{4}$.

2 Find $\frac{7}{12}$ of my investment of \$180 000.

3 What number must $\frac{3}{4}$ be multiplied by to get an answer of 15? [**Hint:** Find $15 \div \frac{3}{4}$.]

4 By how much does $\frac{4}{5}$ exceed $\frac{7}{12}$?

5 In a pig-pen containing 36 piglets, what fraction are males if 16 are female?

6 Which is the better score in a mathematics test: A: 17 out of 20 or B: 21 out of 25?

7 Find $\frac{2}{5}$ of \$2.45

8 How many $2\frac{1}{3}$ m lengths of rope can be cut from a rope of length 21 m?

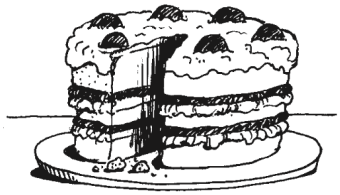
9 Five pieces of material each of length $3\frac{3}{4}$ m are required. Find the total length.

10 On consecutive days you eat $\frac{1}{3}$, $\frac{1}{4}$ and $\frac{1}{5}$ of a cake.

a What fraction has been eaten? **b** What fraction remains?

11 What is the difference between $\frac{3}{7}$ and $\frac{2}{5}$?

12 $\frac{2}{5}$ of a cake remains and is shared equally by 4 children. What fraction of the original cake does each child get?



13 A race track is $3\frac{3}{4}$ km long. How many circuits are necessary to complete a 100 km race?

14 Mouldy Oldy leaves $\frac{1}{3}$ of his money to his son, $\frac{3}{8}$ of it to his wife and the rest to the Heart Foundation. What fraction is left to the Heart Foundation?

15 A marathon swimmer swims $\frac{3}{7}$ of the race distance in the first hour and $\frac{2}{5}$ in the second hour. What fraction of the race has the swimmer left to swim?

16 If I used $\frac{3}{5}$ of a 4 litre can of petrol and $\frac{3}{4}$ of a 10 litre can, how much petrol did I use altogether?

17 A man has \$480 to take home each week. He banks $\frac{1}{8}$ of it, gives $\frac{1}{3}$ of it to his wife and pays \$100 rent out of what remains. How much of his weekly take-home pay is left?

18 A man's estate is valued at \$216 000. On his death his widow is to receive $\frac{1}{4}$ of the estate, and his 4 children are to receive equal shares of the remainder. What fraction does each child receive and how much is it in money terms?

19 Joel owns $\frac{2}{3}$ of a business and Pam owns $\frac{1}{4}$. Fred owns the remainder.

a What fraction does Fred own?

b If Joel and Pam are to have equal shares, what fraction of the business must Joel give to Pam?

20 From a 16 m length of rope, as many equal lengths of $\frac{3}{5}$ m as possible are cut. What length remains?

Answers to word problem solving

1 $1\frac{5}{12}$ **2** \$105 000 **3** 20 **4** $\frac{13}{60}$ **5** $\frac{5}{9}$ **6** A

7 98 cents **8** 9 lengths **9** $18\frac{3}{4}$ m

10 **a** $\frac{47}{60}$ **b** $\frac{13}{60}$ **11** $\frac{1}{35}$ **12** $\frac{1}{10}$ **13** $26\frac{2}{3}$ laps

14 $\frac{7}{24}$ **15** $\frac{6}{35}$ **16** $9\frac{9}{10}$ litres **17** \$160

18 $\frac{3}{16}$, \$40 500 **19** **a** $\frac{1}{12}$ **b** $\frac{5}{24}$ **20** $\frac{2}{5}$ m