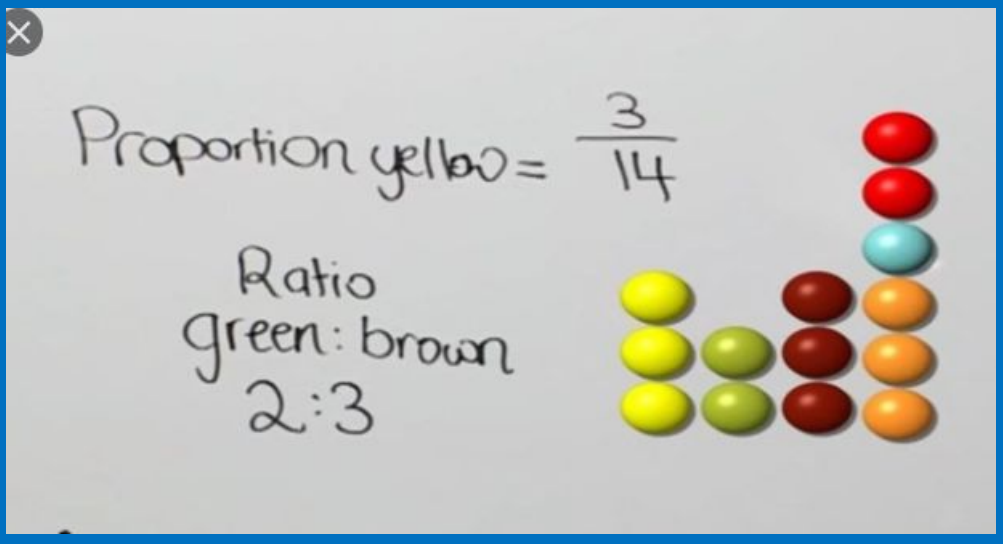
Tuesday 31st March 2020

Today, your tasks are:

Task 1: multiplying fractions

Task 2: solving ratio and proportion problems



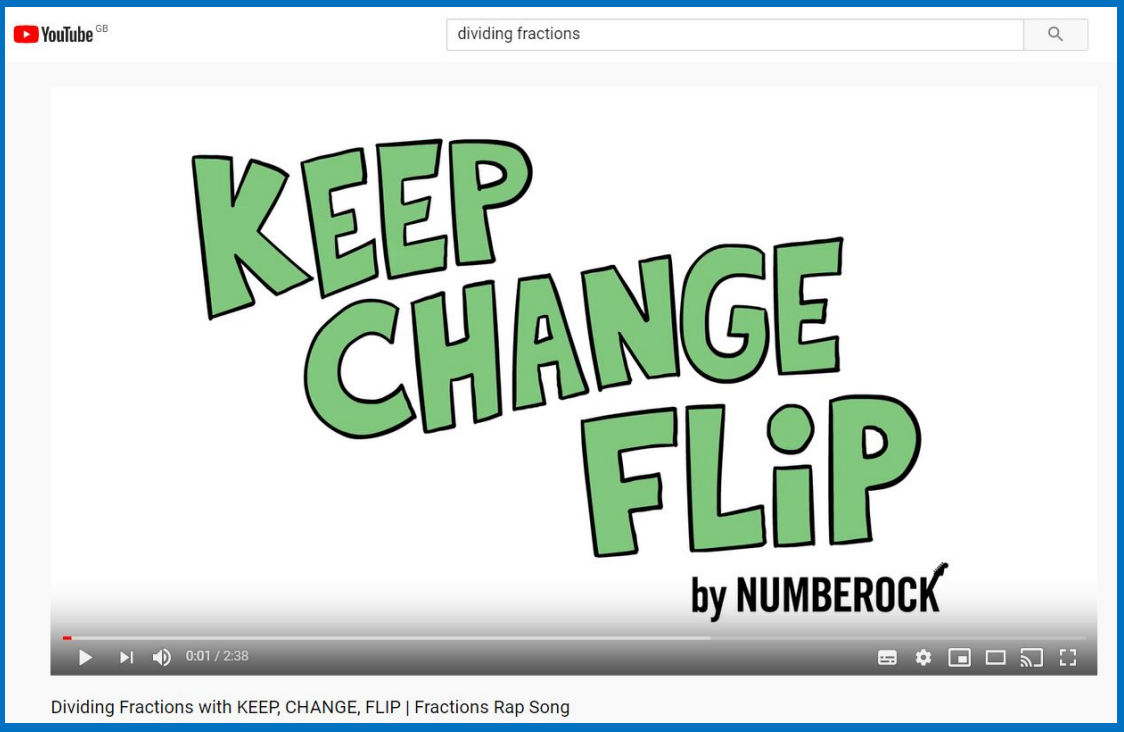
31.03.20

WALT: dividing fractions

Task 1: Watch the video below

Complete the fraction worksheet

https://www.youtube.com/watch?v=nMZJKGyu-Kk



Task 1: Write the calculation in your book. Some calculations will require **cancelling** down when multiplying. Show your working out.

Divide.

(1) $\frac{1}{2} \div \frac{1}{9} = \frac{1}{2} \times \frac{9}{1} = \frac{9}{2} = 4\frac{1}{2}$

(2) $\frac{1}{2} \div \frac{3}{11} =$

(3) $\frac{11}{12} \div \frac{1}{2} =$

(4) $\frac{3}{8} \div \frac{1}{5} =$

(5) $\frac{3}{8} \div \frac{1}{2} =$

(6) $\frac{1}{3} \div \frac{7}{8} =$

(7) $\frac{4}{5} \div \frac{3}{4} =$

(8) $\frac{1}{3} \div \frac{1}{4} =$

(9) $\frac{2}{5} \div \frac{1}{5} =$

(10) $\frac{2}{5} \div \frac{3}{4} =$

(11) $\frac{1}{2} \div \frac{1}{12} =$

(12) $\frac{1}{3} \div \frac{8}{13} =$

(13) $\frac{8}{9} \div \frac{1}{2} =$

(14) $\frac{1}{3} \div \frac{10}{13} =$

(15) $\frac{4}{11} \div \frac{1}{2} =$

(16) $\frac{3}{4} \div \frac{5}{6} =$

(17) $\frac{1}{2} \div \frac{1}{6} =$

(18) $\frac{1}{2} \div \frac{5}{8} =$

Now check your answers.

Fraction Division

May Cross-Reduce

ANSWER KEY

Divide.

(1) $\frac{1}{2} \div \frac{1}{9} = \frac{1}{2} \times \frac{9}{1} = \frac{9}{2} = 4\frac{1}{2}$

(2) $\frac{1}{2} \div \frac{3}{11} = \frac{1}{2} \times \frac{11}{3} = \frac{11}{6} = 1\frac{5}{6}$

(3) $\frac{11}{12} \div \frac{1}{2} = \frac{11}{\cancel{12}_{6}} \times \frac{\cancel{2}^{1}}{1} = \frac{11}{6} = 1\frac{5}{6}$

(4) $\frac{3}{8} \div \frac{1}{5} = \frac{3}{8} \times \frac{5}{1} = \frac{15}{8} = 1\frac{7}{8}$

(5) $\frac{3}{8} \div \frac{1}{2} = \frac{3}{\cancel{8}_{4}} \times \frac{\cancel{2}^{1}}{1} = \frac{3}{4}$

(6) $\frac{1}{3} \div \frac{7}{8} = \frac{1}{3} \times \frac{8}{7} = \frac{8}{21}$

(7) $\frac{4}{5} \div \frac{3}{4} = \frac{4}{5} \times \frac{4}{3} = \frac{16}{15} = 1\frac{1}{15}$

(8) $\frac{1}{3} \div \frac{1}{4} = \frac{1}{3} \times \frac{4}{1} = \frac{4}{3} = 1\frac{1}{3}$

(9) $\frac{2}{5} \div \frac{1}{5} = \frac{2}{\cancel{5}_{1}} \times \frac{\cancel{5}^{1}}{1} = \frac{2}{1} = 2$

(10) $\frac{2}{5} \div \frac{3}{4} = \frac{2}{5} \times \frac{4}{3} = \frac{8}{15}$

(11) $\frac{1}{2} \div \frac{1}{12} = \frac{1}{\cancel{2}_{1}} \times \frac{\cancel{12}^{6}}{1} = \frac{6}{1} = 6$

(12) $\frac{1}{3} \div \frac{8}{13} = \frac{1}{3} \times \frac{13}{8} = \frac{13}{24}$

(13) $\frac{8}{9} \div \frac{1}{2} = \frac{8}{9} \times \frac{2}{1} = \frac{16}{9} = 1\frac{7}{9}$

(14) $\frac{1}{3} \div \frac{10}{13} = \frac{1}{3} \times \frac{13}{10} = \frac{13}{30}$

(15) $\frac{4}{11} \div \frac{1}{2} = \frac{4}{11} \times \frac{2}{1} = \frac{8}{11}$

(16) $\frac{3}{4} \div \frac{5}{6} = \frac{3}{\cancel{4}_{2}} \times \frac{\cancel{6}^{3}}{5} = \frac{9}{10}$

(17) $\frac{1}{2} \div \frac{1}{6} = \frac{1}{\cancel{2}_{1}} \times \frac{\cancel{6}^{3}}{1} = \frac{3}{1} = 3$

(18) $\frac{1}{2} \div \frac{5}{8} = \frac{1}{\cancel{2}_{1}} \times \frac{\cancel{8}^{4}}{5} = \frac{4}{5}$

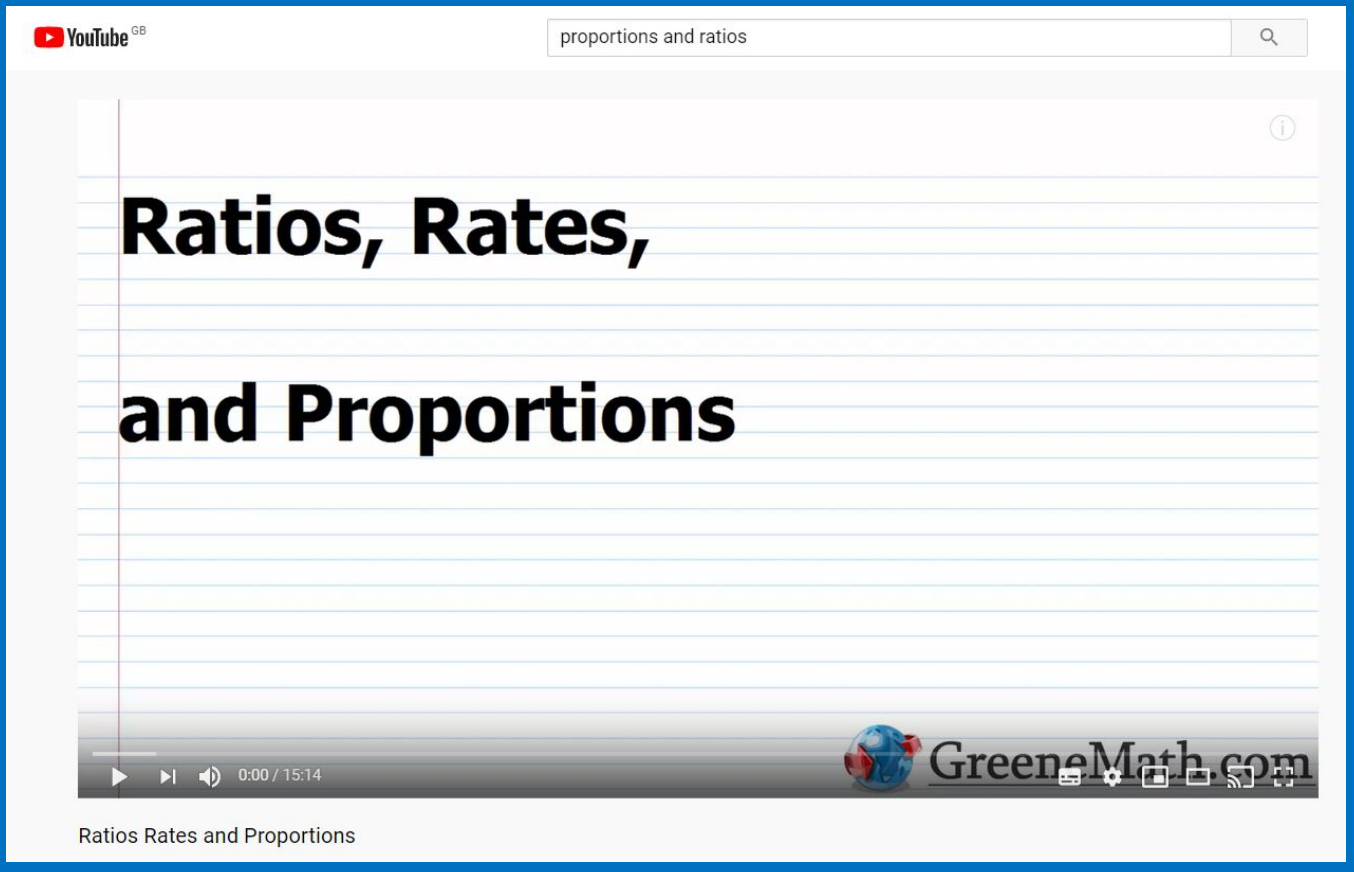
Task 2

31.03.20

WALT solve problems using ratio and proportion

Watch this video to find out more about solving proportion problems.

https://www.youtube.com/watch?v=LPG5-Il9kMA



TARGET To solve problems involving ratio and proportion.

Ratio compares part to part.
Proportion compares part to whole.

Example 1

A necklace is made using this pattern of beads.

Ratios of blue to red beads 2 : 3

Proportion of blue beads $\frac{2}{5}$

Proportion of red beads $\frac{3}{5}$

Example 2

In a supermarket 2 large packets of cereal are put on the shelves for every 5 small packets. 40 small packets are put out. How many large packets are put on the shelves?

Find ratio of small to large packets.

5 : 2

Find value of one part.

8 (40 ÷ 5 = 8)

Work out the number of large packets put out on shelves.

16 (8 × 2 = 16)

Example 3

At a swimming gala 3 in every 8 swimmers receive a medal. How many medals are awarded if there are 72 swimmers altogether?

Find proportion of swimmers receiving a medal.

$\frac{3}{8}$ (3 in every 8)

Find the number of medals awarded.

27 (72 ÷ 8 = 9 9 × 3 = 27)

Task 2

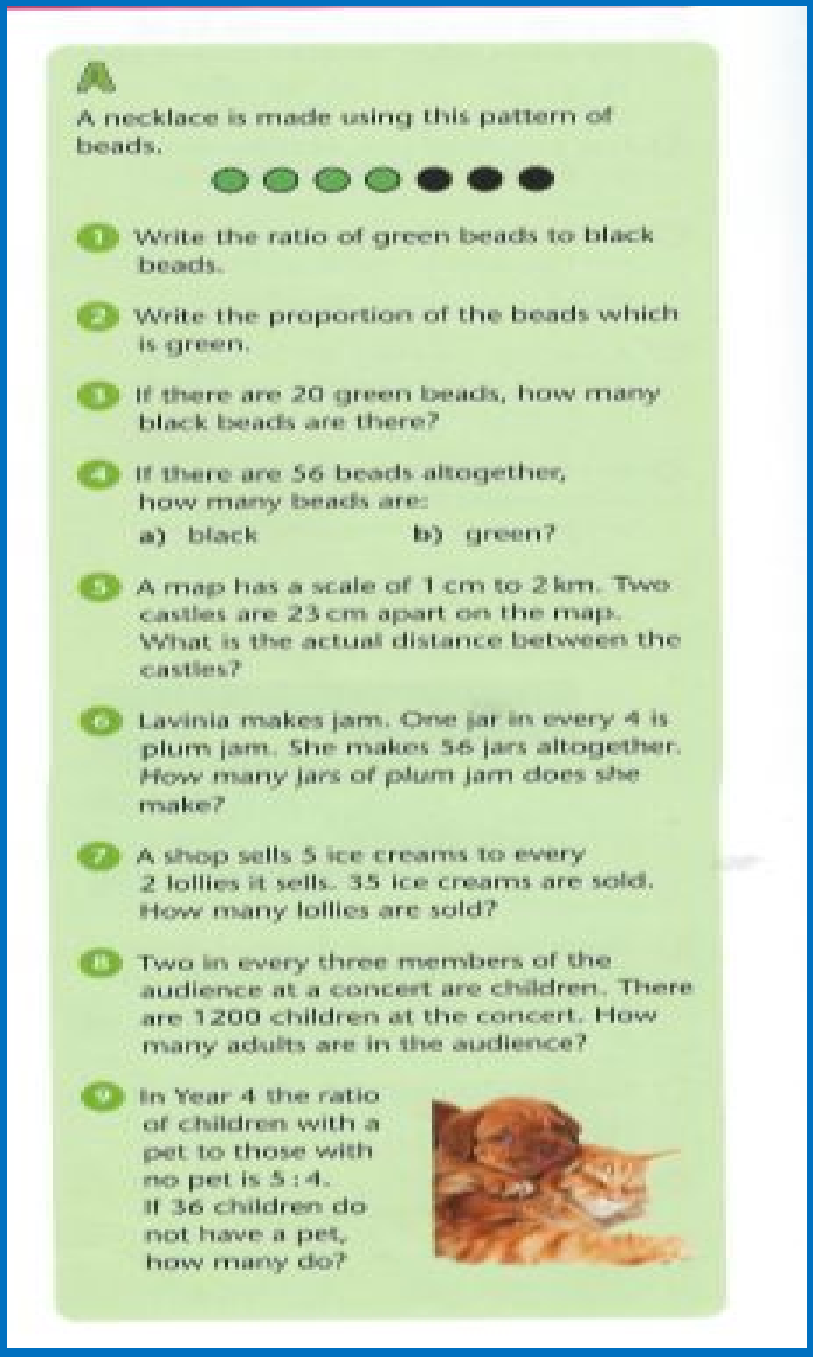
31.03.20 WALT solve problems using ratio and proportion

Becoming Confident: Section A & B

Confident: Section B & C

Write the answers in your book and show your working out.

Check your answers at the end.



A

A necklace is made using this pattern of beads.

1. Write the ratio of green beads to black beads.
2. Write the proportion of the beads which is green.
3. If there are 20 green beads, how many black beads are there?
4. If there are 56 beads altogether, how many beads are:
   a) black b) green?
5. A map has a scale of 1 cm to 2 km. Two castles are 23 cm apart on the maps. What is the actual distance between the castles?
6. Lavinia makes jam. One jar in every 4 is plum jam. She makes 56 jars altogether. How many jars of plum jam does she make?
7. A shop sells 5 ice creams to every 2 lollies it sells. 35 ice creams are sold. How many lollies are sold?
8. Two in every three members of the audience at a concert are children. There are 1200 children at the concert. How many adults are in the audience?
9. In Year 4 the ratio of children with a pet to those with no pet is 5 : 4. If 36 children do not have a pet, how many do?

HINT:

Question 3

Green	Black
4	3
↓ X5	
20	?

Question 3

Green	Black
4	3
↓ X5	↓ X5
20	15

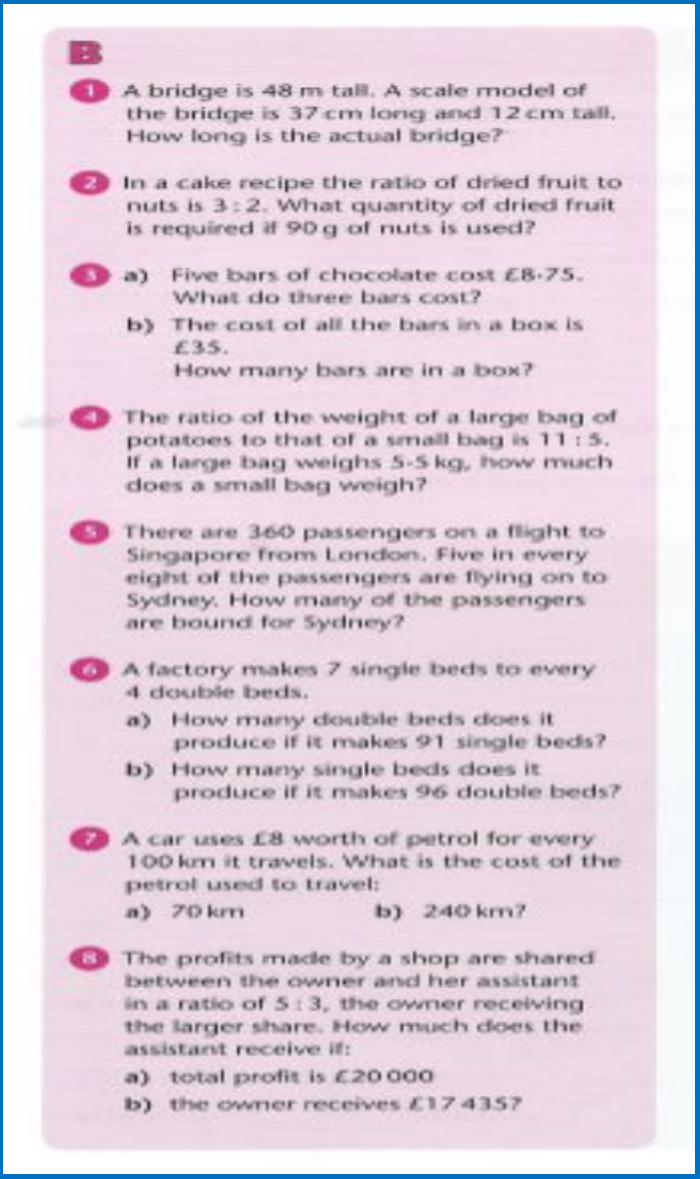
31.03.20 WALT solve problems using proportion

Becoming Confident: Section A & B

Confident: Section B & C

Write the answers in your book and show your working out.

Check your answers on the last page.



B

1. A bridge is 48 m tall. A scale model of the bridge is 37 cm long and 12 cm tall. How long is the actual bridge?
2. In a cake recipe the ratio of dried fruit to nuts is 3 : 2. What quantity of dried fruit is required if 90 g of nuts is used?
3. a) Five bars of chocolate cost £8·75. What do three bars cost?
   b) The cost of all the bars in a box is £35. How many bars are in a box?
4. The ratio of the weight of a large bag of potatoes to that of a small bag is 11 : 5. If a large bag weighs 5·5 kg, how much does a small bag weigh?
5. There are 360 passengers on a flight to Singapore from London. Five in every eight of the passengers are flying on to Sydney. How many of the passengers are bound for Sydney?
6. A factory makes 7 single beds to every 4 double beds.
   a) How many double beds does it produce if it makes 91 single beds?
   b) How many single beds does it produce if it makes 96 double beds?
7. A car uses £8 worth of petrol for every 100 km it travels. What is the cost of the petrol used to travel:
   a) 70 km b) 240 km?
8. The profits made by a shop are shared between the owner and her assistant in a ratio of 5 : 3, the owner receiving the larger share. How much does the assistant receive if:
   a) total profit is £20 000
   b) the owner receives £17 435?

HINT:

Section B

Q1

	Long	Tall
Model	37 cm	12 cm
		x400
Bridge	?	4800 cm
		(48m)

Section B

Q1

	Long	Tall
Model	37 cm	12 cm
		x400
Bridge	14800	4800 cm
	14.8m(48m)	

31.03.20 WALT solve problems using proportion

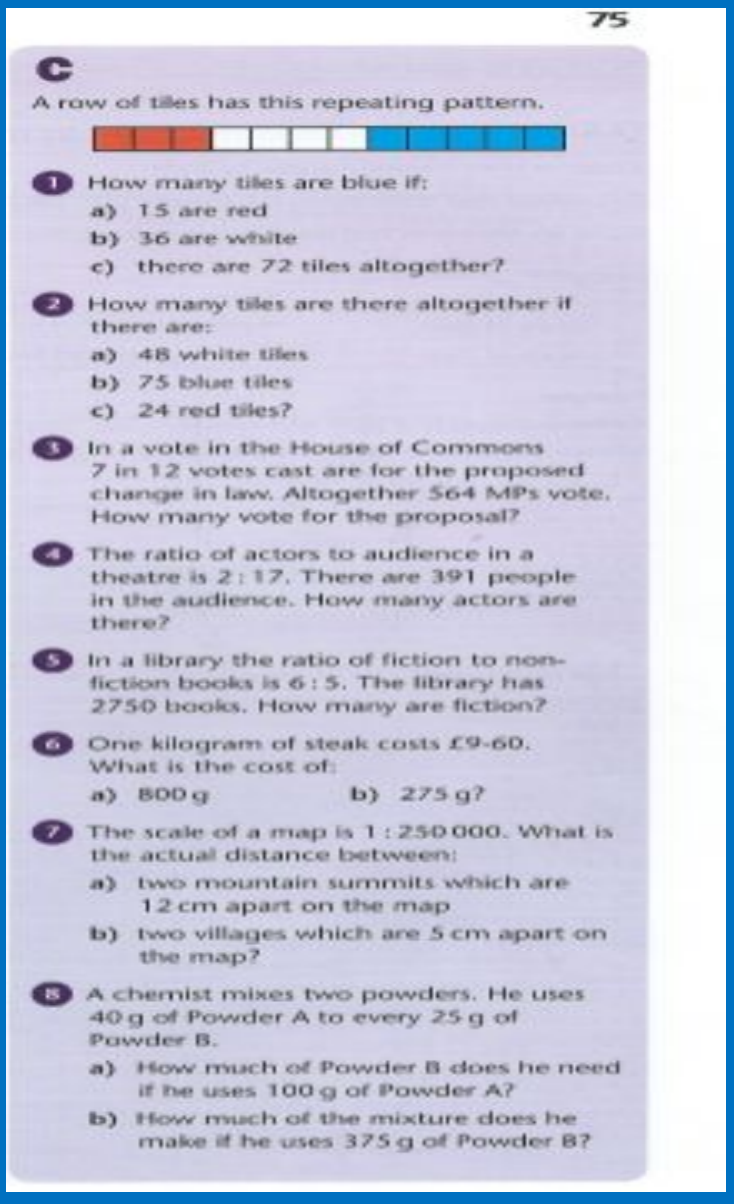
Becoming Confident: Section A & B

Confident: Section B & C

Write the answers in your book and show your working out.

Check your answers on the last page.

HINT:



75

C

A row of tiles has this repeating pattern.

1. How many tiles are blue if:
   a) 15 are red
   b) 36 are white
   c) there are 72 tiles altogether?
2. How many tiles are there altogether if there are:
   a) 48 white tiles
   b) 75 blue tiles
   c) 24 red tiles?
3. In a vote in the House of Commons 7 in 12 votes cast are for the proposed change in law. Altogether 564 MPs vote. How many vote for the proposal?
4. The ratio of actors to audience in a theatre is 2 : 17. There are 391 people in the audience. How many actors are there?
5. In a library the ratio of fiction to non-fiction books is 6 : 5. The library has 2750 books. How many are fiction?
6. One kilogram of steak costs £9·60. What is the cost of:
   a) 800 g b) 275 g?
7. The scale of a map is 1 : 250 000. What is the actual distance between:
   a) two mountain summits which are 12 cm apart on the map
   b) two villages which are 5 cm apart on the map?
8. A chemist mixes two powders. He uses 40 g of Powder A to every 25 g of Powder B.
   a) How much of Powder B does he need if he uses 100 g of Powder A?
   b) How much of the mixture does he make if he uses 375 g of Powder B?

Section C

Q1a)

Section C

Q1

ANSWERS

Now check your answers.

Section A, B & C

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A

1 4:3
2 $\frac{4}{7}$
3 15
4 a) 24 **b)** 32
5 46 km
4 14
7 14
8 600
9 45

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B

1 148 m
2 135 g
3 a) £5·25 **b)** 20
7 a) £5·60 **b)** £19·20
4 2·5 kg
5 225
6 a) 52 **b)** 168
8 a) 12 500 **b)** £10 461

C

1 a) 25 **b)** 45 **c)** 30
2 a) 144 **b)** 180 **c)** 96
3 329
4 46
5 1500
6 a) £7·68 **b)** £2·64
7 a) 30 km **b)** 12·5 km
8 a) 62·5 g **b)** 600 g