

L.O. To solve problems
involving fractions of
amounts

Starter:

$$5 \times 40 =$$

$$900 \times 4 =$$

$$70 \times 9 =$$

$$300 \times 12 =$$

$$60 \times 70 =$$

$$800 \times 90 =$$

Starter:

Answer

$$5 \times 40 = 200$$

$$900 \times 4 = 3600$$

$$70 \times 9 = 630$$

$$300 \times 12 = 3600$$

$$60 \times 70 = 4200$$

$$800 \times 90 = 72000$$

Problem of the Day

Work out the missing values

$$\frac{2}{5} \text{ of } 30 = 3 \times \boxed{}$$

$$\frac{7}{10} \text{ of } 30 = \frac{3}{4} \text{ of } \boxed{}$$

Problem of the Day

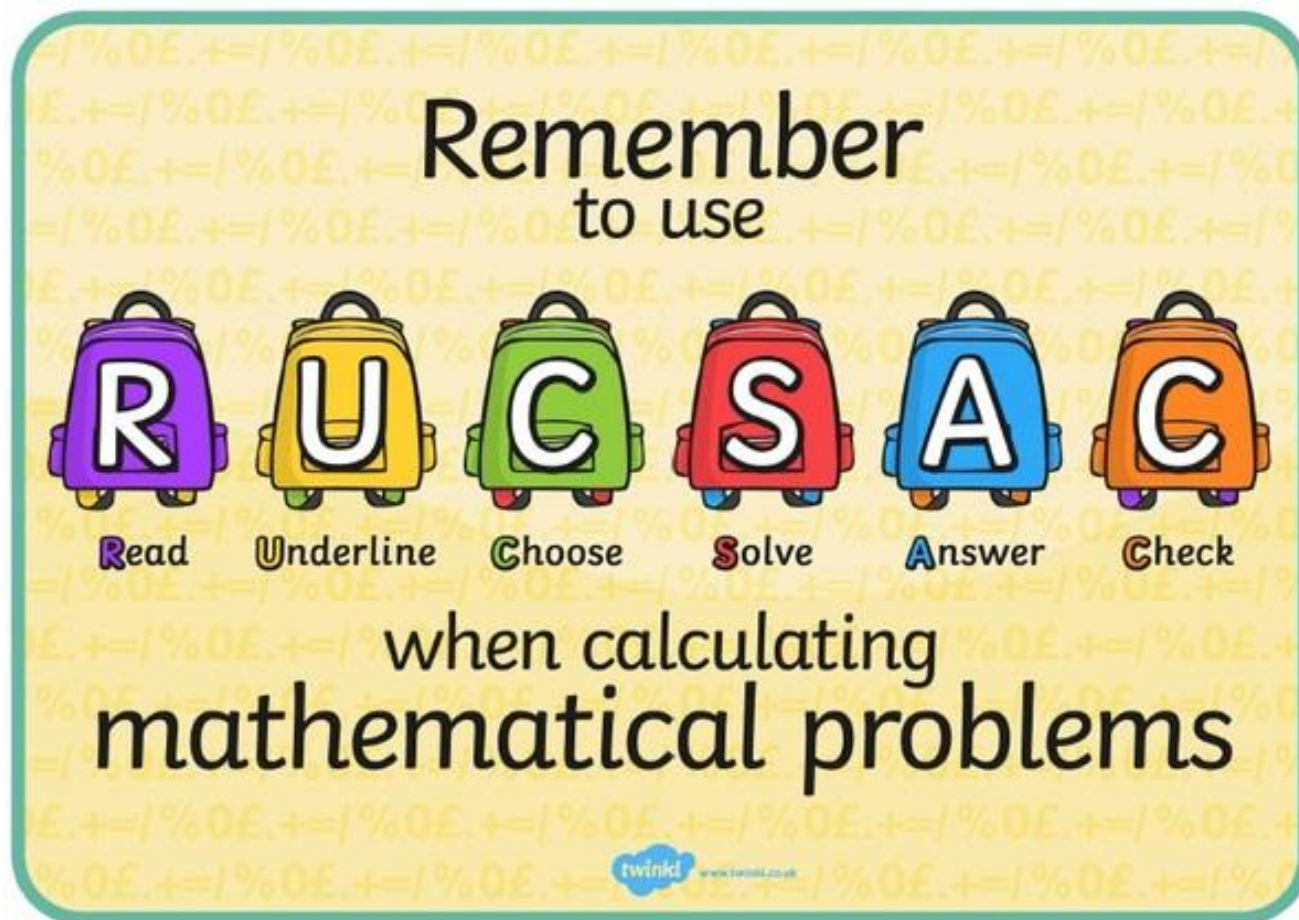
Answer

Work out the missing values

$$\frac{2}{5} \text{ of } 30 = 3 \times \boxed{4}$$

$$\frac{7}{10} \text{ of } 30 = \frac{3}{4} \text{ of } \boxed{28}$$

What will we use to solve these problems?





► 120 children go to the zoo. $\frac{1}{6}$ go and see the lions. $\frac{5}{12}$ go and see the elephants.

- a) How many children see the lions?
- b) How many children see the elephants?
- c) How many children are left?

Answer

- ▶ 120 children go to the zoo. $\frac{1}{6}$ go and see the lions. $\frac{5}{12}$ go and see the elephants.

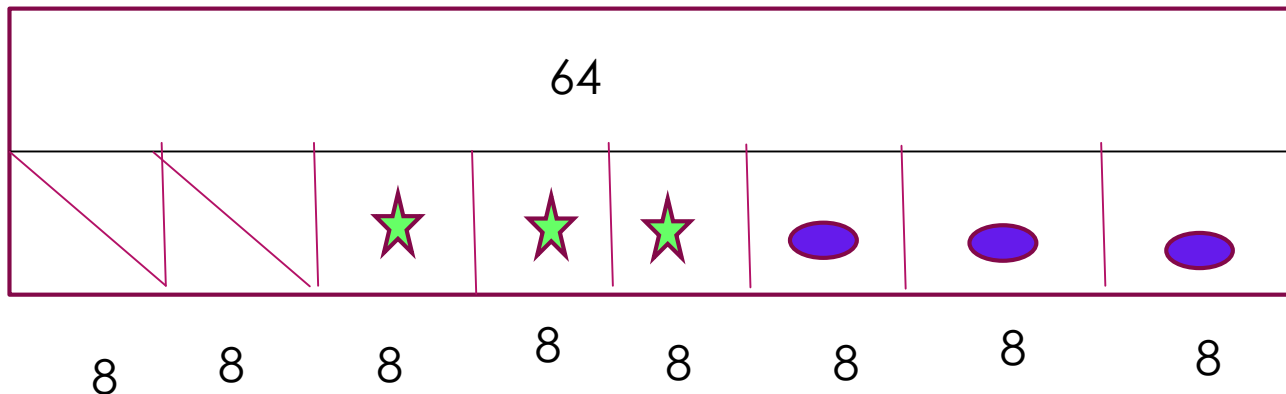
a) How many children see the lions? $\frac{1}{6}$ of 120 = **20 children**

a) How many children see the elephants? $\frac{5}{12}$ of 120 = 120 divided by 12 = 10 x 5 = **50 children**

b) How many children are left? $50 + 20 = 70$

$120 - 70 =$ **50 children left**

- ▶ There are 64 sweets in a packet. $\frac{2}{8}$ are red, $\frac{3}{8}$ are green and the rest are blue.
- ▶ How many sweets are blue?





Answer

- ▶ There are 64 sweets in a packet. $\frac{2}{8}$ are red, $\frac{3}{8}$ are green and the rest are blue.


- ▶ How many sweets are blue?

Red $\frac{2}{8}$ of 64 = 16 sweets

Green $\frac{3}{8}$ of 64 = 24 sweets

Blue = $16 + 24 = 40$

$64 - 40 = 24$ sweets are blue or you can do 8×3 by looking at the previous diagram

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- ▶ Ben has 63 marbles. He loses $\frac{2}{7}$ of them. Of the marbles he has left he gives $\frac{2}{5}$ to his friend.
 - ▶ How many marbles does Ben have left?

Answer

- ▶ Ben has 63 marbles. He loses $\frac{2}{7}$ of them. Of the marbles he has left he gives $\frac{2}{5}$ to his friend.


- ▶ How many marbles does Ben have left?

Loses $\frac{2}{7}$ of 63 = 18 marbles

Left $63 - 18 = 45$ marbles

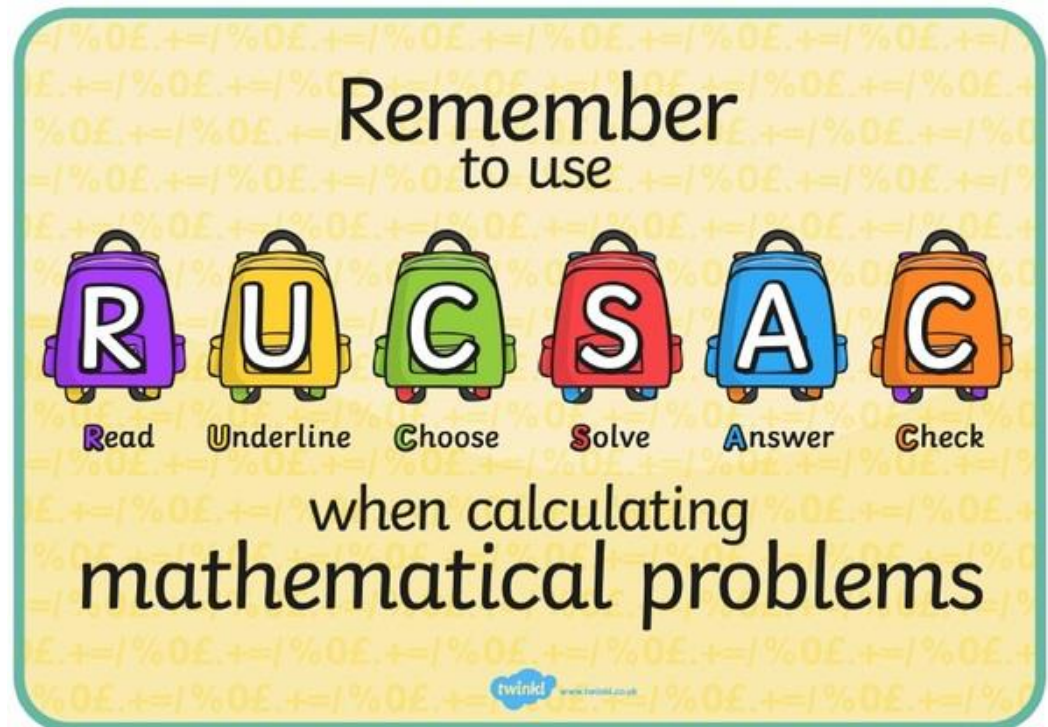
Gives away $\frac{2}{5}$ of 45 (marbles which he had after losing) = 18 marbles

Total left for Ben $45 - 18 = \underline{27}$ marbles

- 
- ▶ Isabel was given some money to spend. She spends $\frac{2}{9}$ of it on a dress and $\frac{4}{9}$ of it on some shoes.
 - ▶ The dress cost £12.
 - a) How much did the shoes cost?
 - b) How much money was Isabel given?

Task

- Solve the word problems



TASK – You can use a bar model to help you

1. Sarah entered a 100-word story competition. She wrote her story over two evenings. On the first evening, she wrote $\frac{6}{10}$ and on the second evening she wrote the rest.
 - a. How many words did she write on the first evening?
 - b. How many words did she write on the second evening and what fraction was this?

- 2) A retired couple won £400 on the lottery. They decided to give $\frac{3}{4}$ to their family and to spend $\frac{1}{4}$ on a weekend away for themselves.
 - a. How much money did the couple give to their family?
 - b. How much money did they spend on their weekend away?

TASK continued

- ▶ 3) 42 children are getting lunch. $\frac{3}{7}$ want pizza and $\frac{2}{6}$ want pasta and the rest want a baked potato. How many children want a baked potato?
- ▶ 4) Lily read $\frac{4}{6}$ of her book by Tuesday. She had 18 pages left to read. How many pages were there in Lily's book?

Answers

Answer

1. Sarah entered a 100-word story competition. She wrote her story over two evenings. On the first evening, she wrote $\frac{6}{10}$ and on the second evening she wrote the rest.

- a. How many words did she write on the first evening? **60 words**
b. How many words did she write on the second evening and what fraction was this? **40 words = $\frac{4}{10}$ or $\frac{2}{5}$**

2)

A retired couple won £400 on the lottery. They decided to give $\frac{3}{4}$ to their family and to spend $\frac{1}{4}$ on a weekend away for themselves.

- a. How much money did the couple give to their family? **£300**
b. How much money did they spend on their weekend away? **£100**

Answers

Answer

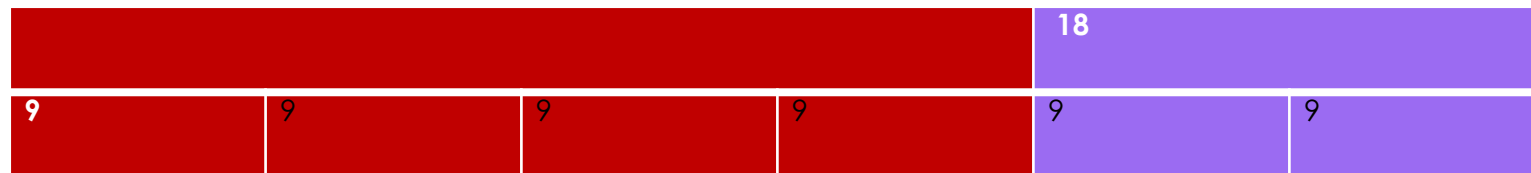
3) 42 children are getting lunch. $\frac{3}{7}$ want pizza and $\frac{2}{6}$ want pasta and the rest want a baked potato. How many children want a baked potato?

$\frac{3}{7}$ of 42 = 18 children want pizza

$\frac{2}{6}$ of 42 = 14 children want pasta

$42 - (18 + 14) = \underline{10 \text{ children want baked potato}}$

4) There are $(36 + 18) = 54$ pages in Lily's book



$9 \times 4 = 36$ pages

18 divided by 2 = 9

Plenary

What is the cost of a full price t-shirt?

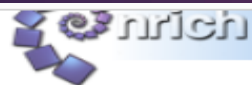
T-shirt Offer

Buy 1, buy another for $\frac{3}{4}$ of the original price.



Show how you worked it out.

Ultimate Challenge

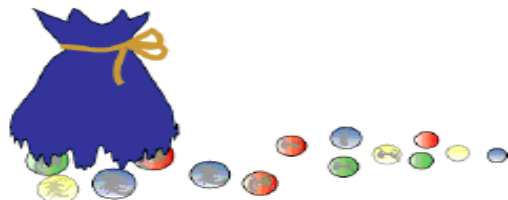


Andy's Marbles

Andy and his friend Sam were walking along the road together. Andy had a big bag of marbles.



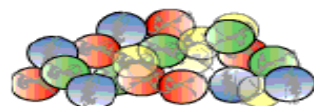
Unfortunately the bottom of the bag split and all the marbles spilled out. Poor Andy!



One third of the marbles rolled down the slope too quickly for Andy to pick them up. One sixth of all the marbles disappeared into the rain-water drain.

Andy and Sam picked up all they could but half of the marbles that remained nearby were picked up by other children who ran off with them.

Andy counted all the marbles he and Sam had rescued.



He gave one third of these to Sam for helping him pick them up. Andy put his remaining marbles into his pocket. There were 14 of them.

How many marbles were there in Andy's bag before the bottom split?

What fraction of the total number that had been in the bag had he lost or given away?