Maths 10.02.21

Eva says,

50% is equivalent to $\frac{1}{2}$

To find 50% of an amount, I can divide by 2
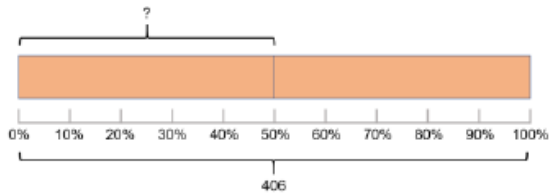
Complete the sentences.

25% is equivalent to $\frac{1}{\Box}$ To find 25% of an amount, divide by ___
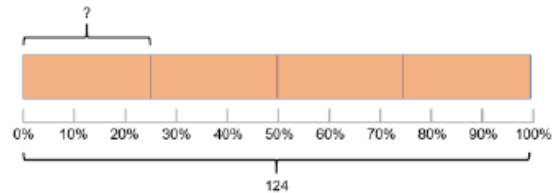
10% is equivalent to $\frac{1}{\Box}$ To find 10% of an amount, divide by ___

1% is equivalent to $\frac{1}{\Box}$ To find 1% of an amount, divide by ___
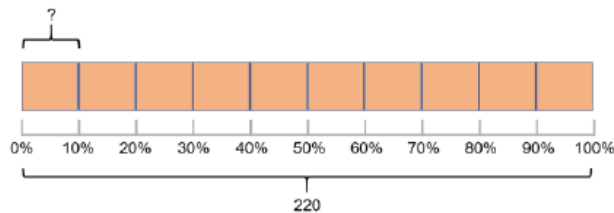
Use the bar models to help you complete the calculations.

50% of 406 =

25% of 124 =

Mo uses a bar model to find 30% of 220

10% of 220 = 22 , so 30% of 220 = 3 × 22 = 66

Use Mo's method to calculate:

40% of 220   20% of 110   30% of 440   90% of 460

■ To find 5% of a number, divide by 10 and then divide by 2
Use this method to work out:
(a) 5% of 140   (b) 5% of 260   (c) 5% of 1 m 80 cm

How else could we work out 5%?

■ Calculate:

15% of 60 m   35% of 300 g   65% of £20

You must try at least one challenge today.

Challenge 1	Challenge 2
Mo says, To find 10% you divide by 10, so to find 50% you divide by 50 Do you agree? Explain why.	Complete the missing numbers. 50% of 40 = ___% of 80 ___% of 40 = 1% of 400 10% of 500 = ___% of 100
Challenge 3	**Challenge 4**
Four children in a class were asked to find 20% of an amount, this is what they did: Whitney: I divided by 5 because 20% is the same as one fifth Amir: I found one percent by dividing by 100, then I multiplied my answer by 20 Alex: I did 10% add 10% Jack: I found ten percent by dividing by 10, then I multiplied my answer by 2 Who do you think has the most efficient method? Explain why. Who do you think will end up getting the answer incorrect?	How many ways can you find 45% of 60? Use similar strategies to find 60% of 45 What do you notice? Does this always happen? Can you find more examples?

Answers

Eva says,

> 50% is equivalent to $\frac{1}{2}$
>
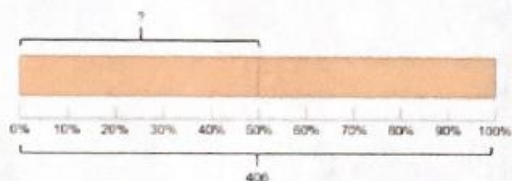> To find 50% of an amount, I can divide by 2

Complete the sentences.

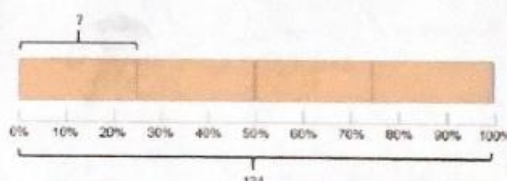25% is equivalent to $\frac{1}{4}$ To find 25% of an amount, divide by **4**

10% is equivalent to $\frac{1}{10}$ To find 10% of an amount, divide by **10**

1% is equivalent to $\frac{1}{100}$ To find 1% of an amount, divide by **100**

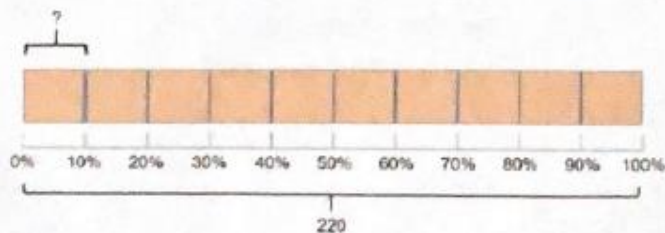Use the bar models to help you complete the calculations.

$$50\% \text{ of } 406 = 406 \div 2$$
$$= 203$$

$$25\% \text{ of } 124 = 124 \div 4$$
$$= 31$$

Mo uses a bar model to find 30% of 220

10% of 220 = 22 , so 30% of 220 = 3 × 22 = 66

Use Mo's method to calculate:

40% of 220	20% of 110	30% of 440	90% of 460
$= 4 \times 22$	$= 2 \times 11$	$= 3 \times 44$	$= 9 \times 46$
$= 88$	$= 22$	$= 132$	$= 414$

To find 5% of a number, divide by 10 and then divide by 2
Use this method to work out:

(a) 5% of 140   (b) 5% of 260   (c) 5% of 1 m 80 cm

$140 \div 10 \div 2 = 7$ $260 \div 10 \div 2 = 13$ $180 \div 10 \div 2 = 9$

How else could we work out 5%?

By finding half of 10%

Calculate:
- Find 10%.
- Halve it to find 5%
- add the 2 together

15% of 60 m   35% of 300 g   65% of £20

9m   105g   £13

Challenge 1

Mo says,

> To find 10% you divide by 10, so to find 50% you divide by 50

Do you agree? Explain why.

Possible answer:

Mo is wrong because 50% is equivalent to a half so to find 50% you divide by 2

Challenge 2

Complete the missing numbers.

50% of 40 = ___% of 80

___% of 40 = 1% of 400

10% of 500 = ___% of 100

25

10

50

Challenge 3

Four children in a class were asked to find 20% of an amount, this is what they did:

Whitney: I divided by 5 because 20% is the same as one fifth

Amir: I found one percent by dividing by 100, then I multiplied my answer by 20

Alex: I did 10% add 10%

Jack: I found ten percent by dividing by 10, then I multiplied my answer by 2

Who do you think has the most efficient method? Explain why.
Who do you think will end up getting the answer incorrect?

All methods are acceptable ways of finding 20% Children may have different answers because they may find different methods easier. Discussion could be had around whether or not their preferred method is always the most efficient.

Challenge 4

How many ways can you find 45% of 60?

Use similar strategies to find 60% of 45

What do you notice?

Does this always happen?
Can you find more examples?

Possible methods include:

$10\% \times 4 + 5\%$

$25\% + 20\%$

$25\% + 10\% + 10\%$

$50\% - 5\%$

To find 60% of 45

$10\% \times 6$

$50\% + 10\%$

$10\% \times 3$

Children will notice that 45% of 60 = 60% of 45

This always happens.