

RECALL

Match these fractions, decimals and percentages

40%

0.65

25%

$\frac{1}{20}$

65%

$\frac{1}{2}$

50%

$\frac{3}{12}$

5%

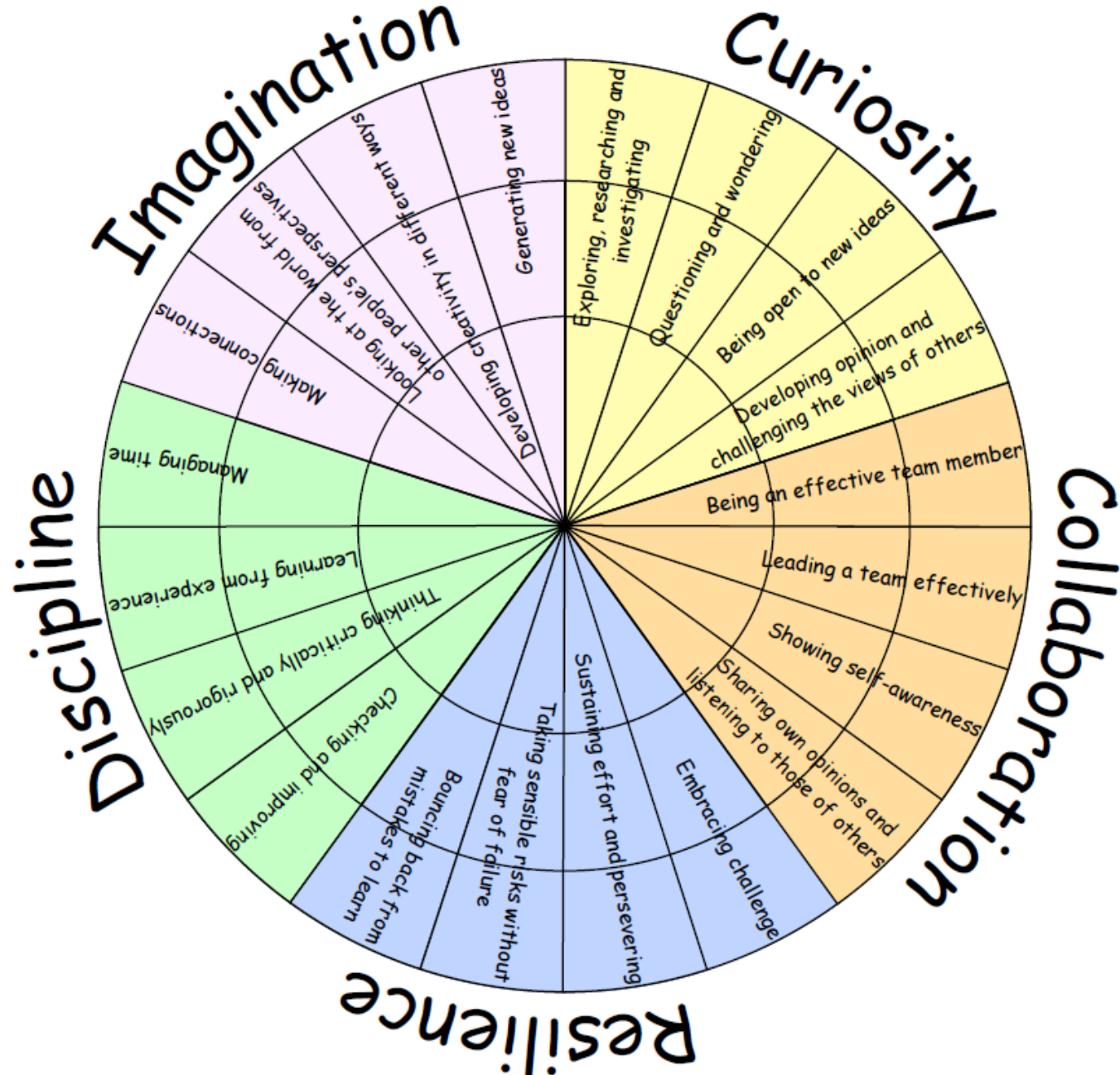
$\frac{2}{5}$



I CAN RECALL AND USE
EQUIVALENCE BETWEEN
FRACTIONS, DECIMALS AND %
TO SOLVE PROBLEMS

Percentage (15iii)

LEARNING HABITS?



GUIDED PRACTICE

- 1) Liverpool have scored 23 goals from set pieces. This is 20% of their total goals.

How many goals have they scored in total?

- 2) Notts County have scored 16 headers this season. This is 40% of their total goals.

How many goals have they scored in total?



Bonus point to anyone who can name the Notts County all-time record goal scorer.



Blackburn have scored 12 penalties this season. This is 37.5% of their total goals.

How many goals have they scored in total?

INTELLIGENT PRACTICE



$$10\% \text{ of } \underline{\quad\quad} = 9$$

$$20\% \text{ of } \underline{\quad\quad} = 9$$

$$30\% \text{ of } \underline{\quad\quad} = 9$$

$$50\% \text{ of } \underline{\quad\quad} = 9$$

What do you notice?



$$30\% \text{ of } \underline{\quad\quad} = 90$$

$$30\% \text{ of } \underline{\quad\quad} = 180$$

$$30\% \text{ of } \underline{\quad\quad} = 360$$

$$30\% \text{ of } \underline{\quad\quad} = 1800$$

What do you notice?



$$60\% \text{ of } \underline{\quad\quad} = 120$$

$$60\% \text{ of } \underline{\quad\quad} = 12$$

$$60\% \text{ of } \underline{\quad\quad} = 36$$

$$60\% \text{ of } \underline{\quad\quad} = 3.6$$

What do you notice?



If you know **40%** of a number, explain how you could work out the original number.

INTELLIGENT PRACTICE



$$10\% \text{ of } 90 = 9$$

$$20\% \text{ of } 45 = 9$$

$$30\% \text{ of } 30 = 9$$

$$50\% \text{ of } 18 = 9$$

What do you notice?



$$30\% \text{ of } 300 = 90$$

$$30\% \text{ of } 600 = 180$$

$$30\% \text{ of } 1200 = 360$$

$$30\% \text{ of } 6000 = 1800$$

What do you notice?



$$60\% \text{ of } 200 = 120$$

$$60\% \text{ of } 20 = 12$$

$$60\% \text{ of } 60 = 36$$

$$60\% \text{ of } 6 = 3.6$$

What do you notice?

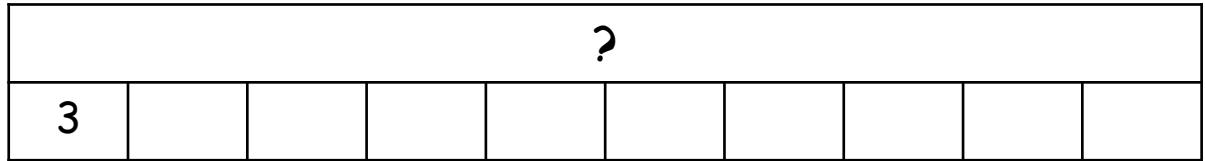


If you know **40%** of a number, explain how you could work out the original number.

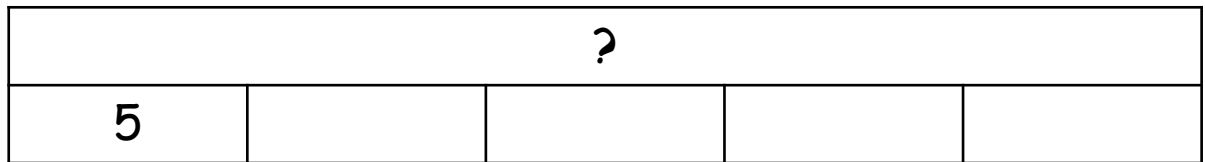
DIVE DEEPER 1

1) Complete the bar models to find the missing numbers.

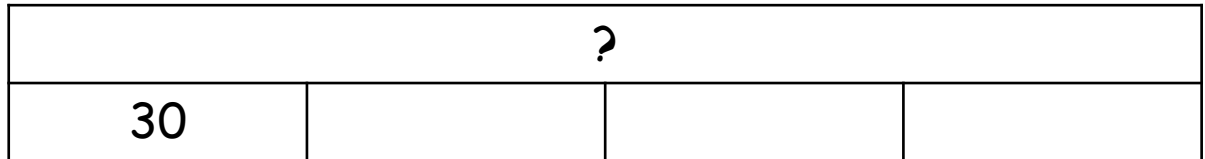
a) 10% of ____ = 3
10% is equivalent to $\frac{1}{10}$
 $3 \times \underline{\quad} =$



a) 20% of ____ = 5
20% is equivalent to $\frac{\quad}{\quad}$
 $5 \times \underline{\quad} =$



a) 25% of ____ = 30
25% is equivalent to $\frac{\quad}{\quad}$
 $30 \times \underline{\quad} = \underline{\quad}$



2) 120 people arrive by bus to watch sports day. This is 40% of the spectators.

How many spectators are there in total?

Draw a bar model to help you solve this

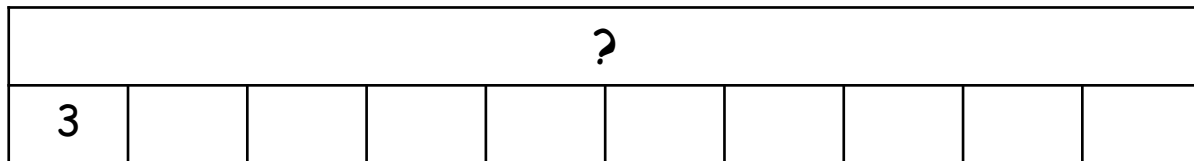
DIVE DEEPER 1 ANSWERS

1) Complete the bar models to find the missing numbers.

a) 10% of 30 = 3

10% is equivalent to $\frac{1}{10}$

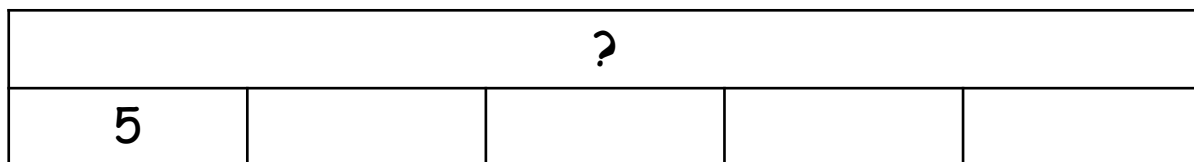
$$3 \times 10 = 30$$



a) 20% of 25 = 5

20% is equivalent to $\frac{1}{5}$

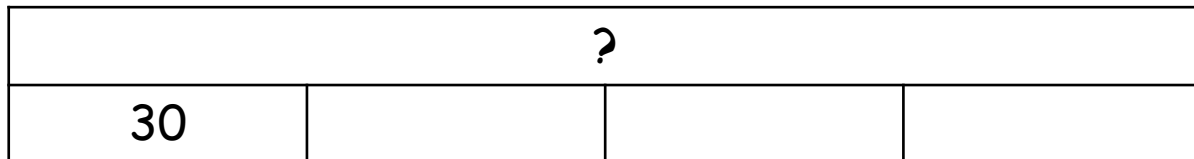
$$5 \times 5 = 25$$



a) 25% of 120 = 30

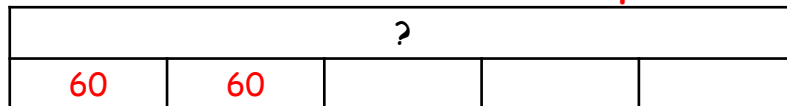
25% is equivalent to $\frac{1}{4}$

$$30 \times 4 = 120$$



2) 120 people arrive by bus to watch sports day. This is 40% of the spectators.

How many spectators are there in total? 300 spectators in total.



DIVE DEEPER 2

3) In a bag of orange and lemon sweets, 30% are orange and 63 sweets are lemon.

How many orange sweets are there?

4) Amelia has a piece of string. She cuts off 25%. The piece that is left is 240 cm long.

How long was the string before she cut it?

5a) Find a solution to Aki's percentage puzzle.

'I am thinking of a number. I subtract 20. I then find 10% of what is left. I finish on 40. What number did I start with?

b) Find a solution to Alex's percentage puzzle.

'I am thinking of a number. I find 10%. I then subtract 20. I finish on 40. What number did I start with?

DIVE DEEPER 2 ANSWERS

3) In a bag of orange and lemon sweets, 30% are orange and 63 sweets are lemon.

How many orange sweets are there? **27 sweets are orange.**

4) Amelia has a piece of string. She cuts off 25%. The piece that is left is 240 cm long.

How long was the string before she cut it? **320 cm**

5a) Find a solution to Aki's percentage puzzle.

'I am thinking of a number. I subtract 20. I then find 10% of what is left. I finish on 40. What number did I start with? **400**

b) Find a solution to Alex's percentage puzzle.

'I am thinking of a number. I find 10%. I then subtract 20. I finish on 40. What number did I start with? **600**

DIVE DEEPER 3

Find the solutions.

What is the same and what is different about how you found each solution?

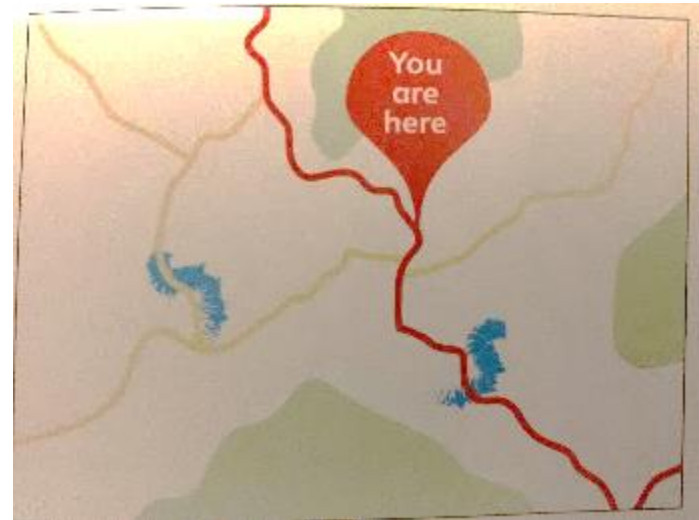
a)

Guess my number.

Is it 30?

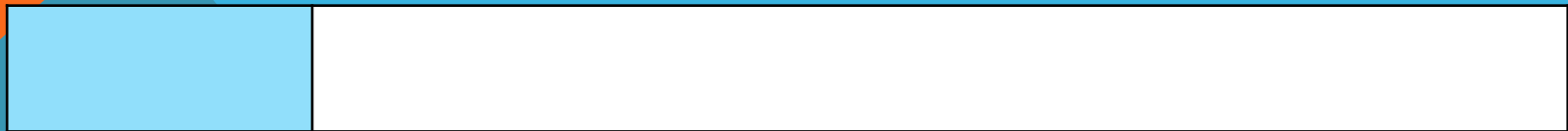
No, but that is exactly 15% of my number

b) Jen has completed 30% of her 120 mile journey. How far has she travelled?



c) 15% of the rectangle is shaded.

5m



12m

What is the area of the whole rectangle?

SELF-ASSESSMENT

- Some will even be able to think about most efficient methods to find percentages of amounts
 - Some will be able to find any percentage of an amount
 - Most will be able to find any multiple of 10 and 5% of an amount
 - All will be able to explain how to use 10% to find a multiple of 10%
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