

Varied Fluency

Step 10: Calculate Quantities

National Curriculum Objectives:

Mathematics Year 4: (4F10a) [Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number](#)

Differentiation:

Developing Questions to support finding fractions of quantities. Involves unit fractions only.

Expected Questions to support finding fractions of quantities. Involves non-unit fractions.

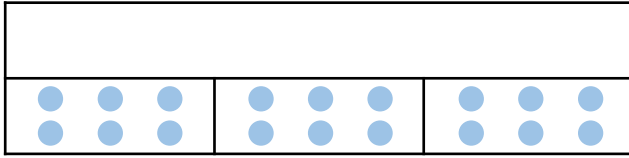
Greater Depth Questions to support finding fractions of quantities. Involves non-unit fractions and the use of related facts.

More [Year 4 Fractions](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Calculate Quantities

1a. Rosie is finding fractions of an amount. She knows that $\frac{1}{3}$ of her number is 6.



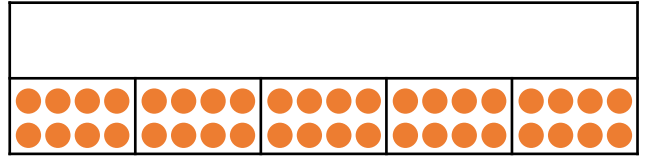
Use the bar model to find the whole.



VF

Calculate Quantities

1b. Jake is finding fractions of an amount. He knows that $\frac{1}{5}$ of her number is 8.

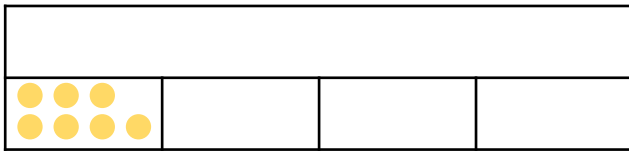


Use the bar model to find the whole.



VF

2a. $\frac{1}{4}$ of a number is 7.

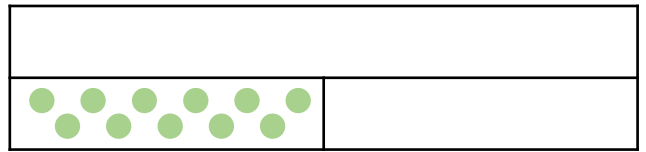


Complete the bar model to find the whole.



VF

2b. $\frac{1}{2}$ of a number is 11.

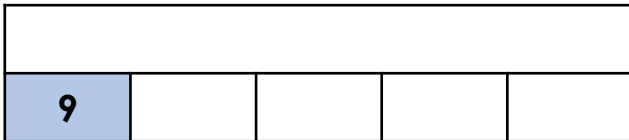


Complete the bar model to find the whole.



VF

3a. Anna knows $\frac{1}{5}$ of a number is 9.



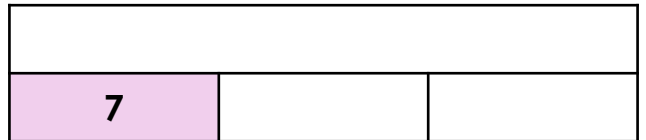
Use this information and the bar model above to complete the sentence below:

$$\frac{1}{5} \text{ of } \square = \square$$



VF

3b. Ellan knows $\frac{1}{3}$ of a number is 7.



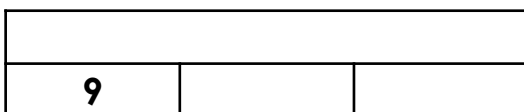
Use this information and the bar model above to complete the sentence below:

$$\frac{1}{3} \text{ of } \square = \square$$



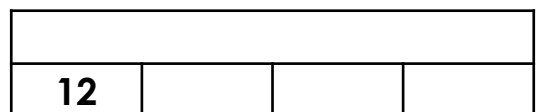
VF

4a. Fred has a packet of biscuits. He has eaten $\frac{1}{3}$ of the packet. He has eaten a total of 9 biscuits. How many biscuits were in the packet before Fred started eating them?



VF

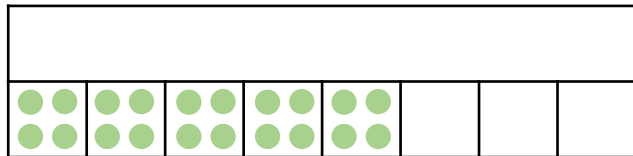
4b. Annie has a packet of crisps. She has eaten $\frac{1}{4}$ of the packet. She has eaten a total of 12 crisps. How many crisps were in the packet before Annie started eating them?



VF

Calculate Quantities

5a. Marco is finding fractions of an amount. He knows that $\frac{5}{8}$ of his number is 20.



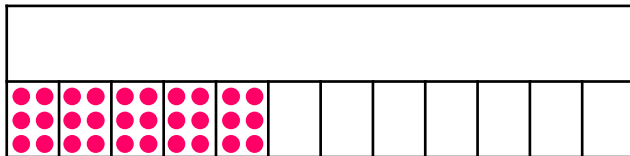
Use the bar model to find the whole.



VF

Calculate Quantities

5b. Millie is finding fractions of an amount. She knows that $\frac{5}{12}$ of his number is 30.

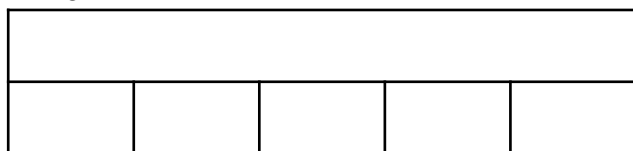


Use the bar model to find the whole.



VF

6a. $\frac{3}{5}$ of a number is 15.

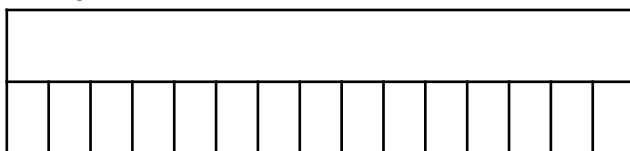


Complete the bar model to find the whole.



VF

6b. $\frac{7}{15}$ of a number is 21.

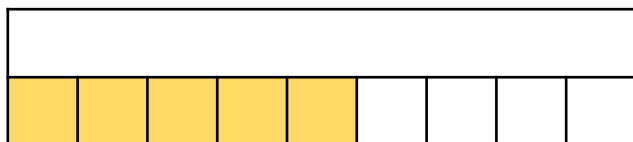


Complete the bar model to find the whole.



VF

7a. Georgie knows $\frac{5}{9}$ of a number is 30.



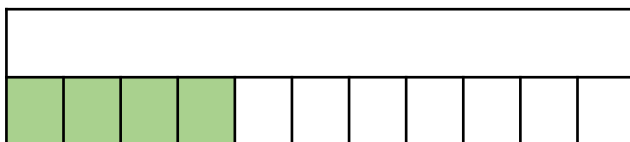
Use this information and the bar model above to complete the sentence below:

$$\frac{5}{9} \text{ of } \square = \square$$



VF

7b. Benny knows $\frac{4}{11}$ of a number is 12.



Use this information and the bar model above to complete the sentence below:

$$\frac{4}{11} \text{ of } \square = \square$$



VF

8a. George has a packet of sweets.
He has eaten $\frac{4}{9}$ of the packet.
He has eaten 16 sweets.
How many sweets were in the packet before George started eating them?



VF

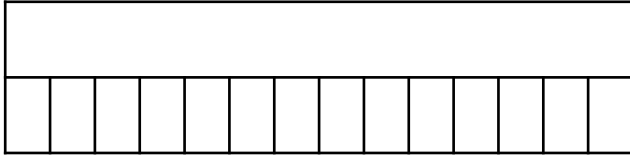
8b. Freda has a pallet of paint.
She has used $\frac{3}{7}$ of the pallet.
She has used 12ml of paint.
How much paint was on the pallet before Freda started painting?



VF

Calculate Quantities

9a. Pippa is finding fractions of an amount. She knows that $\frac{2}{14}$ of her number is 6.



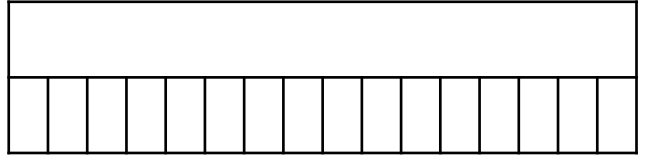
Use the bar model to find the whole.



VF

Calculate Quantities

9b. Dylan is finding fractions of an amount. He knows that $\frac{4}{16}$ of his number is 10.

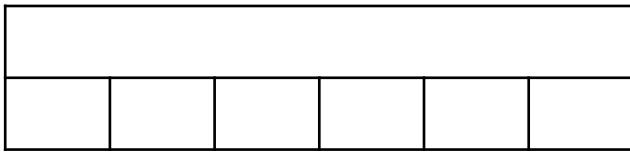


Use the bar model to find the whole.



VF

10a. $\frac{6}{12}$ of a number is 18.

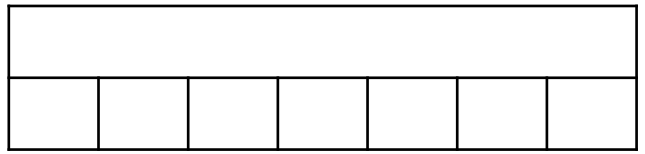


Complete the bar model to find the whole.



VF

10b. $\frac{4}{14}$ of a number is 16.

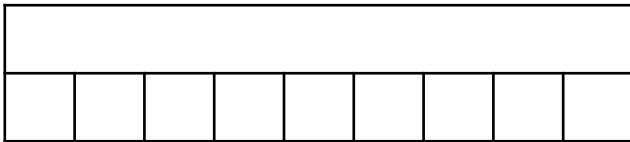


Complete the bar model to find the whole.



VF

11a. Philip knows $\frac{6}{9}$ of a number is 72.



Use this information and the bar model above to complete the sentence below:

$$\frac{4}{9} \text{ of } \square = \square$$



VF

11b. Alice knows $\frac{10}{15}$ of a number is 30.



Use this information and the bar model above to complete the sentence below:

$$\frac{9}{15} \text{ of } \square = \square$$



VF

12a. Leo and Liz are eating chocolates.

Leo has eaten $\frac{1}{4}$ of the box.

Liz has eaten $\frac{3}{8}$ of the box.

If Leo has eaten 10 chocolates, how many did Liz eat?

How many chocolates were in the box before they were opened?



VF

12b. Chad and Cara are eating cakes.

Chad has eaten $\frac{2}{6}$ of the batch.

Cara has eaten $\frac{5}{11}$ of the batch.

If Cara has eaten 15 cakes, how many did Chad eat?

How many cakes were in the batch before they started eating them?



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Varied Fluency Calculate Quantities

Developing

1a. 18

2a. 28

3a. 45; $\frac{1}{5}$ of $\boxed{45} = \boxed{9}$

4a. 27 biscuits

Expected

5a. 32

6a. 25

7a. 54; $\frac{5}{9}$ of $\boxed{54} = \boxed{30}$

8a. 36 sweets

Greater Depth

9a. 21

10a. 36

11a. 108; $\frac{2}{9}$ of $\boxed{108} = \boxed{24}$

12a. Leo has eaten 15 chocolates. There were 40 chocolates to begin with.

Varied Fluency Calculate Quantities

Developing

1b. 40

2b. 22

3b. 21; $\frac{1}{3}$ of $\boxed{21} = \boxed{7}$

4b. 48 crisps

Expected

5b. 72

6b. 45

7b. 33; $\frac{4}{11}$ of $\boxed{33} = \boxed{12}$

8b. 28ml of paint

Greater Depth

9b. 40

10b. 56

11b. 45; $\frac{9}{15}$ of $\boxed{45} = \boxed{27}$

12b. Chad has eaten 11 mini pancakes. There were 33 mini pancakes to begin with.