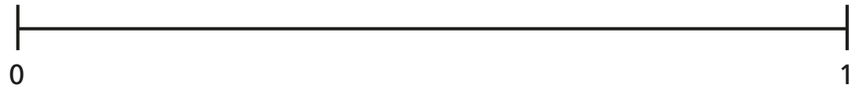
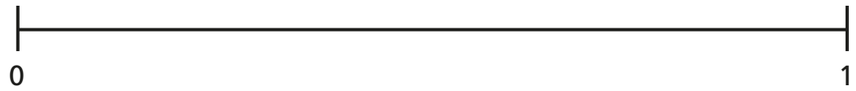
Fractions on a number line

1 Draw an arrow to show the fractions on the number lines.

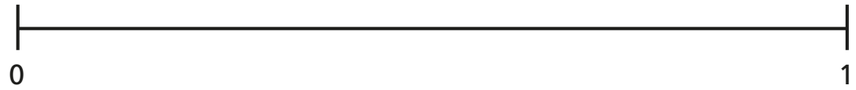
a) $\frac{1}{2}$



b) $\frac{1}{3}$



c) $\frac{1}{4}$



Are your answers accurate or are they estimates?

2 Write <, > or = to compare the fractions.

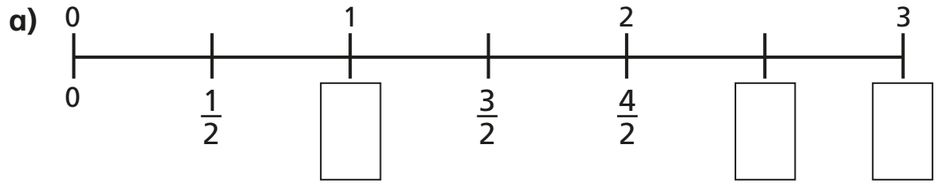
a) $\frac{1}{2}$ ◯ $\frac{1}{4}$

b) $\frac{1}{4}$ ◯ $\frac{1}{3}$

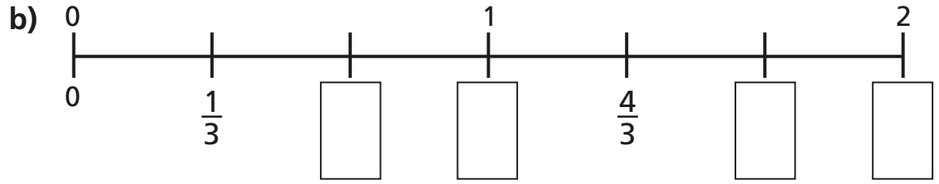
c) $\frac{1}{3}$ ◯ $\frac{1}{2}$

3 Write the missing fractions on the number lines.

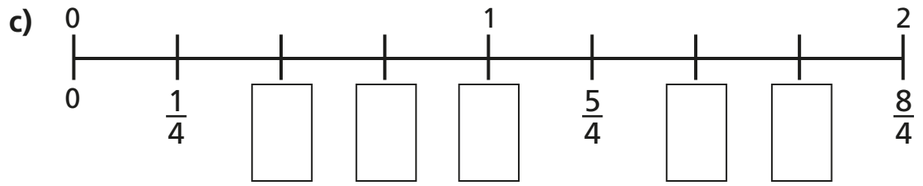
a)



b)



c)



d) Write three fractions that are equivalent to one whole.

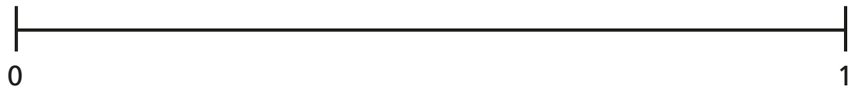
Use the number lines to help you.

What do you notice?

Talk about it with a partner.

4 Draw an arrow to estimate where each fraction belongs on the number line.

a) $\frac{3}{4}$



b) 1 and $\frac{2}{3}$

5 Write each fraction under the correct heading.

$\frac{2}{3}$ $\frac{4}{4}$ $\frac{5}{3}$ $\frac{1}{8}$ $\frac{3}{3}$

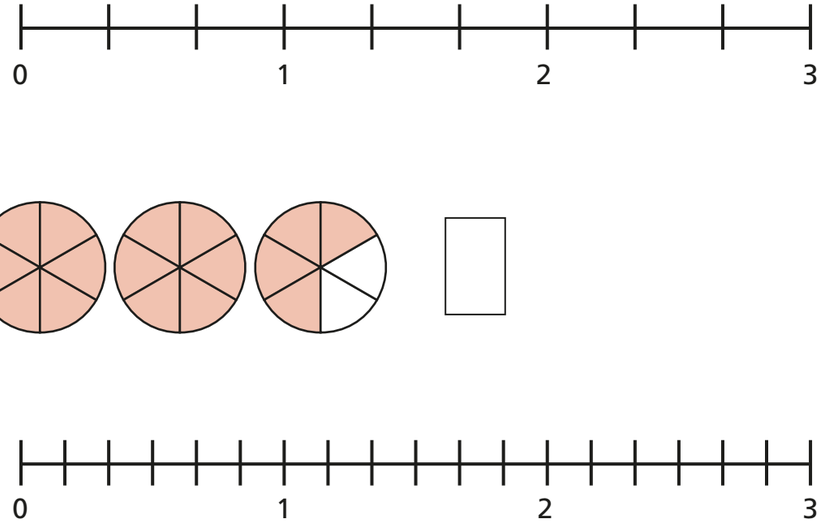
$\frac{3}{4}$ $\frac{7}{4}$ $\frac{8}{8}$ $\frac{7}{8}$

Less than one whole	Equal to one whole	More than one whole

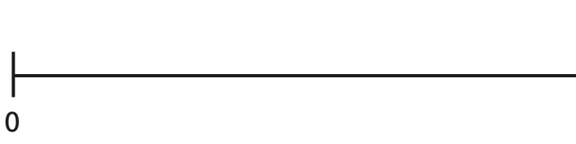
6 What fraction is shown in each diagram?

Draw an arrow to show the fraction on the number line.

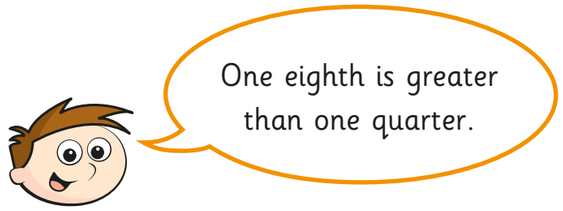
a)



b)



7

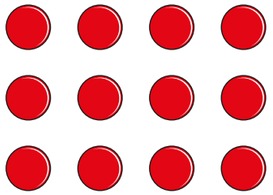


Do you agree with Teddy? _____

Use the number line to show why.

Fractions of a set of objects (1)

1 Here are some counters.



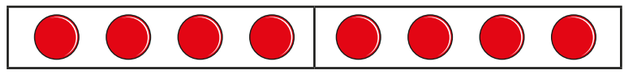
a) Circle $\frac{1}{4}$ of the counters.

b) How many counters did you circle? ☐

c) What is $\frac{1}{4}$ of 12? ☐

2 Draw counters in the bar models to help you complete each number sentence. The first one has been done for you.

a) $\frac{1}{2}$ of 8 = 4



b) $\frac{1}{2}$ of 16 = ☐

c) $\frac{1}{4}$ of 8 = ☐

d) $\frac{1}{4}$ of 16 = ☐

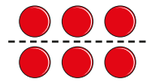
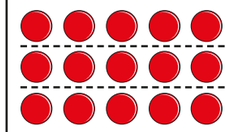
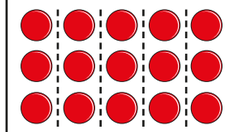
3

To find a half I need to divide by 2

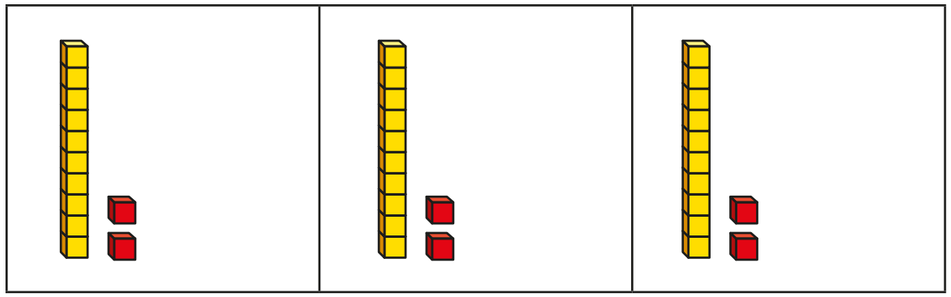
Do you agree with Dexter? _____

Talk about it with a partner.

4 Complete the table.

Fraction	Division	Example	Drawing
one half	divide by 2	$\frac{1}{2}$ of 6 = 3	
one quarter		$\frac{1}{4}$ of 8 = 2	
			
			

5 Huan uses a bar model and base 10 to find $\frac{1}{3}$ of 36



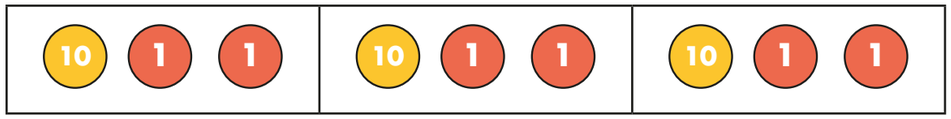
Use Huan's method to complete the calculations.

a) $\frac{1}{3}$ of 63 = ☐

b) $\frac{1}{4}$ of 48 = ☐

c) $\frac{1}{4}$ of 92 = ☐

6 Nijah uses a bar model and place value counters to find $\frac{1}{3}$ of 36



Use Nijah's method to complete the calculations.

a) $\frac{1}{3}$ of 96 = ☐

b) $\frac{1}{5}$ of 60 = ☐

c) $\frac{1}{4}$ of 52 = ☐

7 Which amount is greater? Tick your answer.

☐ $\frac{1}{3}$ of £75 or ☐ $\frac{1}{5}$ of £75

Show your workings.

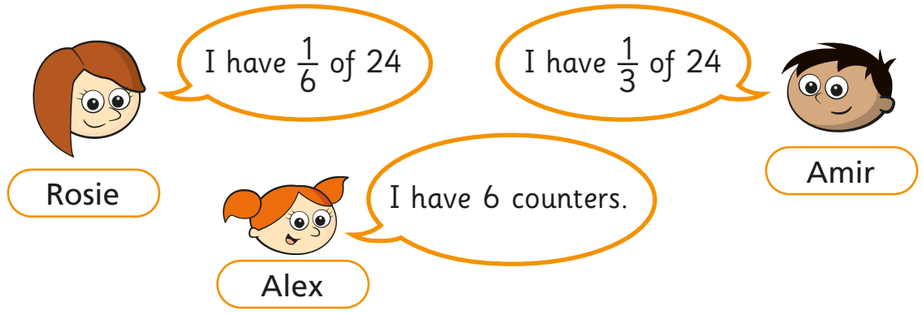
8 Complete the number sentences.

a) $\frac{1}{2}$ of ☐ = 30

b) $\frac{1}{4}$ of ☐ = 20

c) $\frac{1}{5}$ of ☐ = 50

9 Rosie, Amir and Alex each find a fraction of 24 using counters.



a) Order the children from least counters to most counters.

_____ _____ _____

least counters most counters

b) What fraction of the counters does Alex have? ☐

c) Rosie and Amir put their counters together.

Write their total number of counters as a fraction of 24 ☐

Fractions of a set of objects (2)

1 Draw counters in the bar models to help you complete each number sentence.

a) $\frac{2}{3}$ of 15 = ☐

b) $\frac{3}{4}$ of 8 = ☐

c) $\frac{2}{5}$ of 20 = ☐

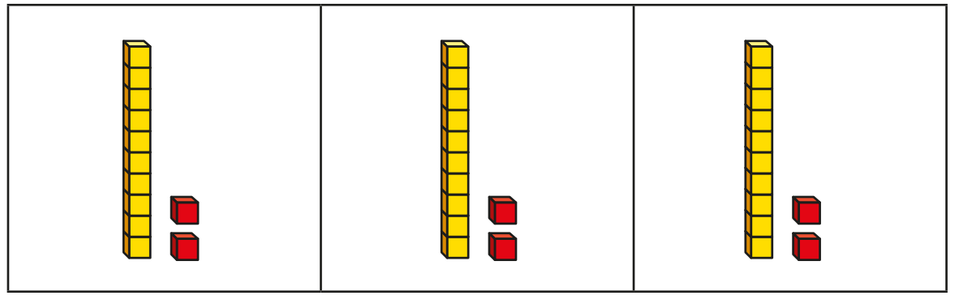
2 Match the questions and answers.

$\frac{2}{3}$ of 9 = ?	9
$\frac{3}{5}$ of 15 = ?	6
$\frac{5}{6}$ of 12 = ?	15
$\frac{3}{4}$ of 20 = ?	10

3 What is $\frac{6}{6}$ of 18? ☐

How do you know?

4 Brett uses a bar model and base 10 to find $\frac{2}{3}$ of 36



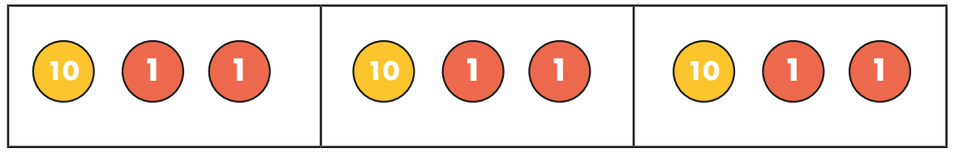
Use Brett's method to complete the number sentences.

a) $\frac{2}{3}$ of 63 = ☐

b) $\frac{3}{4}$ of 48 = ☐

c) $\frac{3}{4}$ of 92 = ☐

5 Kim uses a bar model and place value counters to find $\frac{2}{3}$ of 36



Use Kim's method to complete the number sentences.

a) $\frac{2}{3}$ of 96 = ☐

b) $\frac{3}{5}$ of 60 = ☐

c) $\frac{3}{4}$ of 52 = ☐

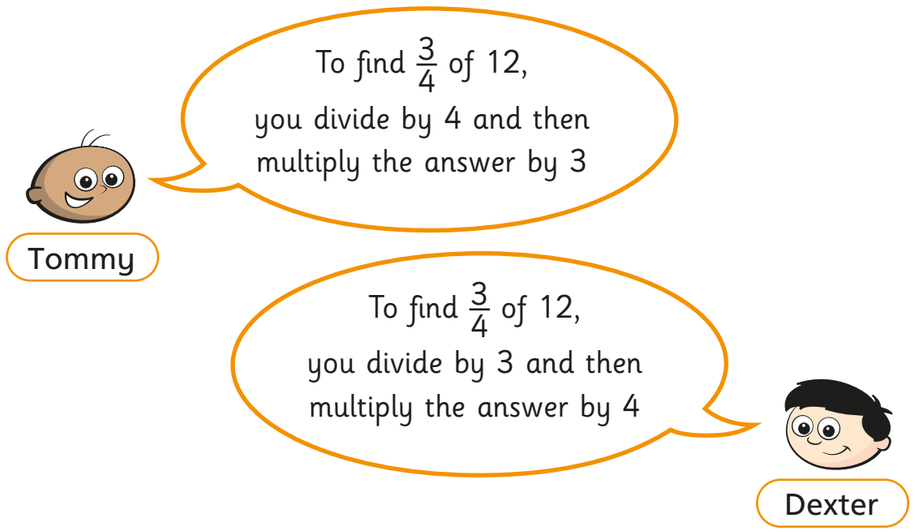
6 Complete the number sentences.

a) $\frac{2}{3}$ of ☐ = 30

b) $\frac{3}{4}$ of ☐ = 30

c) $\frac{5}{6}$ of ☐ = 30

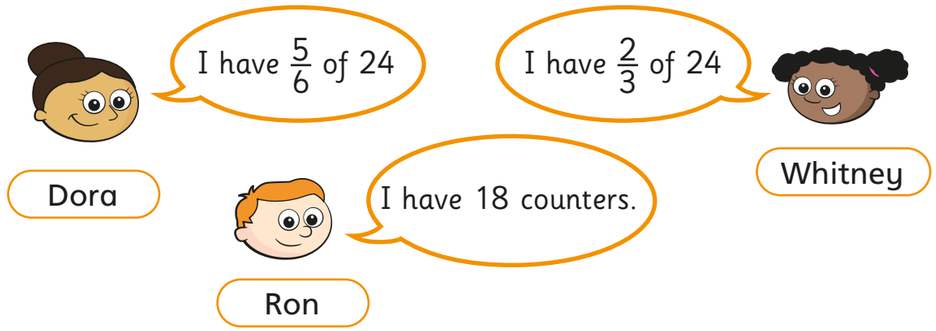
7



Who is correct? _____

How do you know? Show your working.

8 Dora, Whitney and Ron each find a fraction of 24 using counters.



a) Who has the most counters? Show your workings.

b) How many more counters does Dora have than Whitney?

☐

9 Write fractions to make the statements correct.

☐ of 36 < 18

☐ of 36 = 18

☐ of 36 > 18

How many different answers can you find for each?

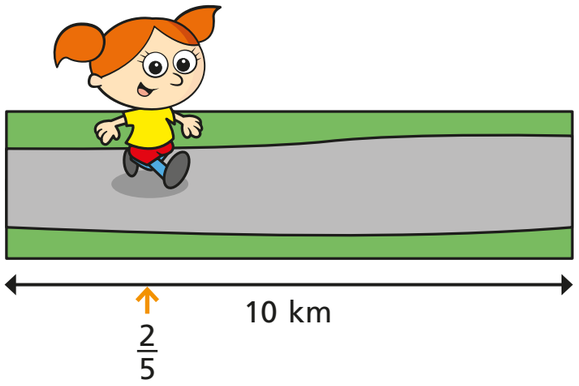
Compare with a partner.

Fractions of a set of objects (3)

1 In a class of 32 children, three eighths are girls.

How many children are boys?

2 Alex is taking part in a 10 km race.



She has run two fifths of the race.

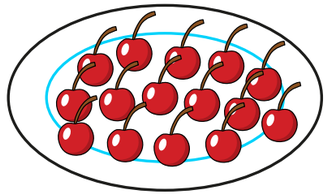
What distance does she have left to run? km

3 Filip has £3 and 20p.

He spends half of his money.

How much does he have left? £ and p

4 Teddy opens a bag of cherries and puts $\frac{1}{2}$ on a plate.



How many cherries were there in the whole bag?

5 Ron has £4 and 50p.

He decides to share the money equally between himself and his two sisters.

How much money will each child get?

£ and p

6 A bag of potatoes weighs 500 g.

Annie's dad uses one quarter of the potatoes to make a shepherd's pie.

What is the mass of the potatoes left in the bag?

g

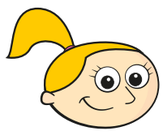
7 Dexter spends one third of his money.

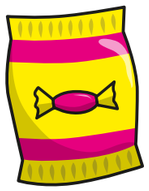
He has these coins left.

How much did Dexter spend?

£ ☐ and ☐ p

8 Eva has a bag of 20 sweets.





She eats $\frac{1}{4}$ of the sweets.

She gives $\frac{1}{5}$ of the sweets that are left to Dora and 2 sweets to her mum.

How many sweets does Eva have left? ☐

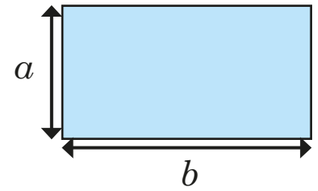
9 Whitney has a box of raisins.

She eats $\frac{1}{4}$ of the raisins and gives 3 to her brother.

She has 9 raisins left.

How many raisins were in the box at the start? ☐

10 Here is a rectangle.



The perimeter of the rectangle is less than 30 cm.

Side a is one half of the length of side b.

a) Complete the table to show the different possible integer lengths of side a and side b.

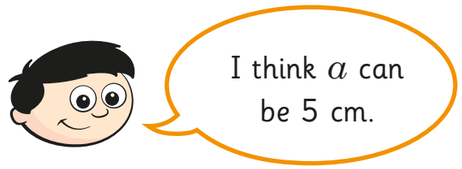
Length of side a	Length of side b	Perimeter
1 cm	2 cm	6 cm

b) What are the longest possible integer lengths of side a and b?

side a _____

side b _____

c)



Talk to a partner about why Dexter is wrong.

Equivalent fractions (1)

1 Shade the bar models to represent the fractions.

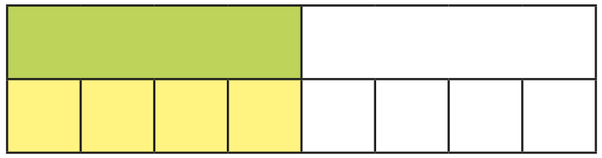
a) Shade $\frac{1}{2}$ of the bar model.

b) Shade $\frac{2}{4}$ of the bar model.

What do you notice?

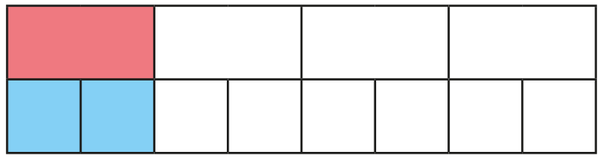
2 Complete the equivalent fractions.

a)



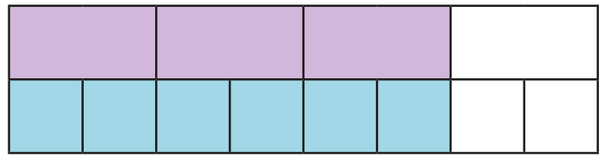
$\frac{1}{2} = \frac{\square}{8}$

b)



$\frac{1}{4} = \frac{2}{\square}$

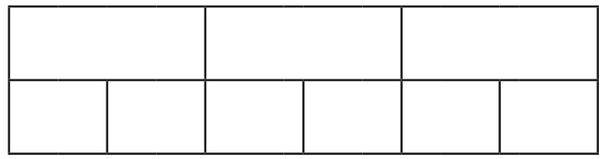
c)



$\frac{3}{4} = \frac{6}{\square}$

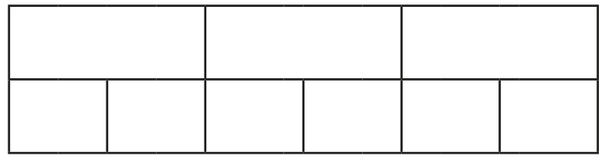
3 Shade the bar models to represent the equivalent fractions.

a)



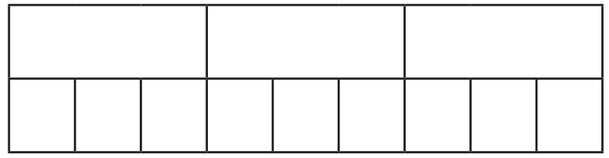
$\frac{1}{3} = \frac{2}{6}$

b)



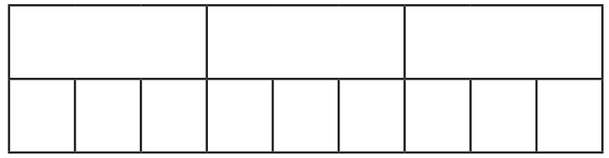
$\frac{2}{3} = \frac{4}{6}$

c)



$\frac{1}{3} = \frac{3}{9}$

d)



$\frac{2}{3} = \frac{6}{9}$

Can you find any more equivalent fractions using the bar models?

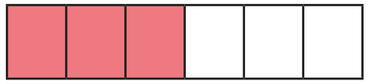
4 Match each bar model to its equivalent fraction.

$\frac{1}{2}$

$\frac{1}{3}$

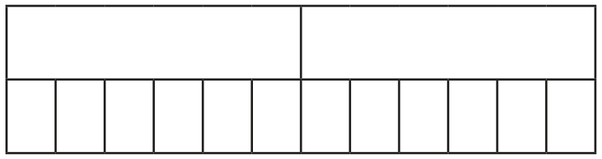
$\frac{1}{4}$

$\frac{1}{8}$



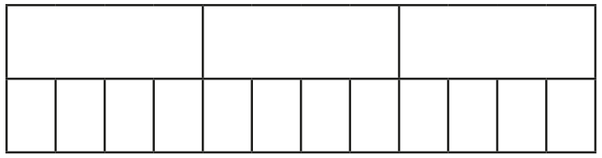
5 Shade the bar models to complete the equivalent fractions.

a)



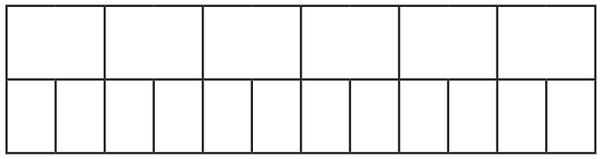
$\frac{1}{2} = \frac{\square}{12}$

b)



$\frac{1}{3} = \frac{\square}{12}$

c)



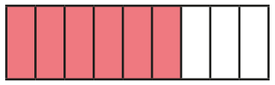
$\frac{1}{6} = \frac{\square}{12}$

6 The bar models represent fractions.

A

C

B



D

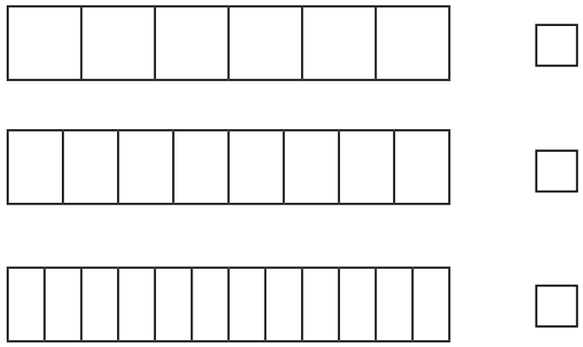
Which is the odd one out? _____

Why do you think this?

7 This bar model represents $\frac{3}{4}$

Tick the bar models that can be used to show a fraction that is equivalent to $\frac{3}{4}$

Shade the bar models to support your answers.



Talk to a partner about your answers.