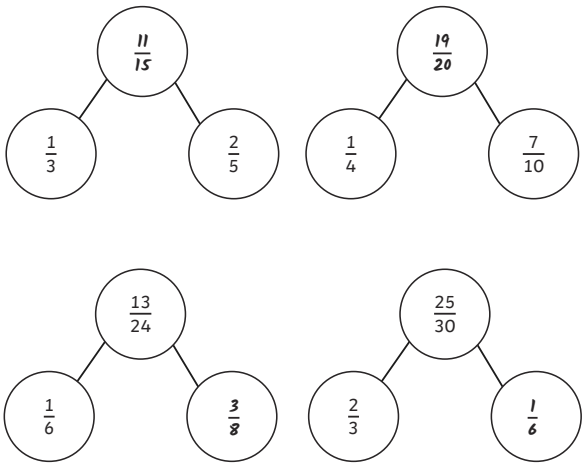
1)



2) $\frac{7}{48}$

1)

$\frac{1}{8} + \frac{1}{9} = \frac{17}{72}$ — *true*

$\frac{4}{9} - \frac{5}{12} = \frac{1}{36}$ — *true*

$\frac{1}{9} + \frac{1}{10} = \frac{2}{90}$ — *false*

$\frac{2}{9} - \frac{1}{7} = \frac{1}{63}$ — *false*

$\frac{3}{5} + \frac{3}{8} = \frac{6}{40}$ — *false*

$\frac{11}{12} - \frac{4}{7} = \frac{7}{84}$ — *false*

$\frac{4}{7} - \frac{1}{2} = \frac{1}{14}$ — *true*

$\frac{2}{5} + \frac{5}{9} = \frac{43}{45}$ — *true*

$\frac{4}{5} - \frac{1}{7} = \frac{23}{35}$ — *true*

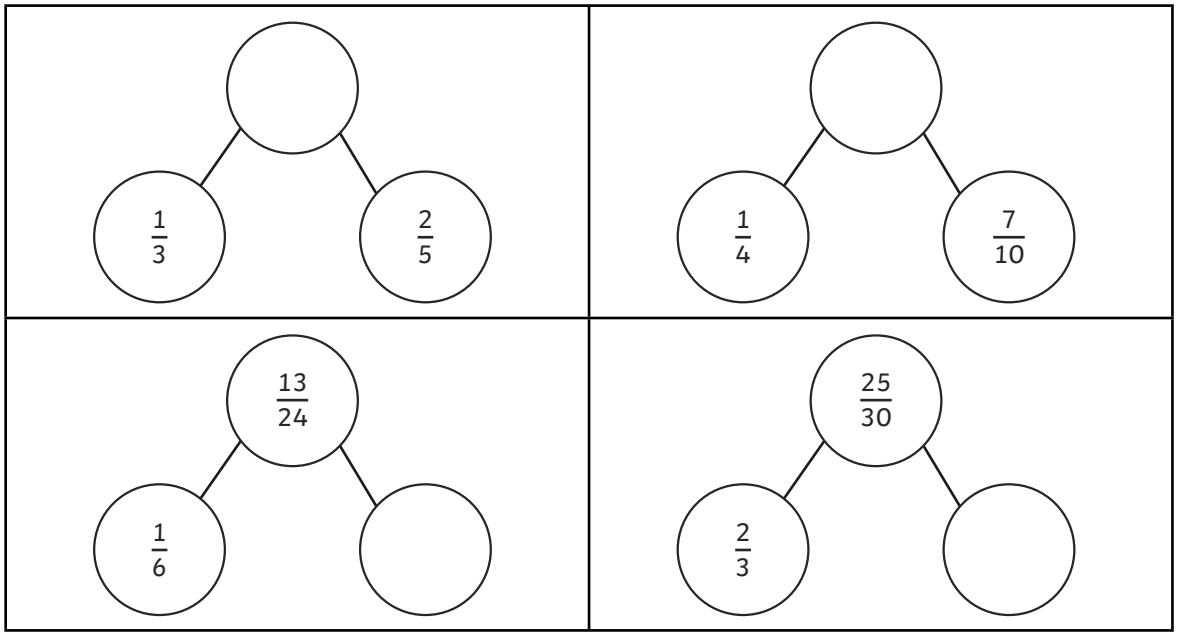
2) *Mildred the cat is incorrect.* $\frac{1}{4} + \frac{3}{8} + \frac{1}{16} = \frac{11}{16}$, *so the shaded fraction of box C is* $\frac{5}{16}$.

1) **a)** *Hifi is correct:* $\frac{1}{2} + \frac{5}{12}$, $\frac{1}{3} + \frac{7}{12}$, $\frac{1}{4} + \frac{2}{12}$, $\frac{1}{4} + \frac{8}{12}$, $\frac{1}{6} + \frac{3}{12}$, $\frac{1}{6} + \frac{5}{12}$, $\frac{1}{6} + \frac{9}{12}$.

b) *Mildred is incorrect. There are only five calculations that have an answer with a numerator of 7:* $\frac{1}{8} + \frac{9}{12}$, $\frac{1}{9} + \frac{8}{12}$, $\frac{1}{5} + \frac{6}{12}$, $\frac{1}{6} + \frac{5}{12}$, $\frac{1}{8} + \frac{2}{12}$

c) *Oscar is correct. The answer with the largest denominator is made by putting the digit 7 as the denominator in the first fraction and the lowest common multiple of 7 and 12 is 84. (8 and 9 both have lower common multiples with 12.)*

1) Complete these part-whole models. Show your working out using common denominators. Simplify fractions where possible.

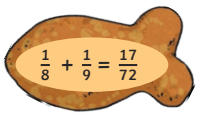


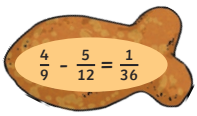
2) Here is a pile of cat treats.

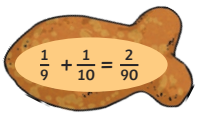
		
Milo ate $\frac{3}{8}$ of the cat treats.	Bella ate $\frac{5}{12}$ of the cat treats.	Oscar ate $\frac{1}{16}$ of the cat treats.

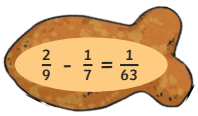
What fraction of the treats are left for Meeko? _____

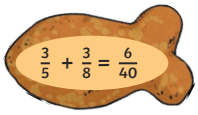
1) Hifi has arranged his cat treats into fraction calculations.

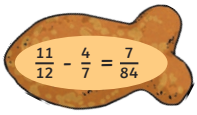


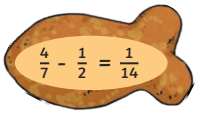


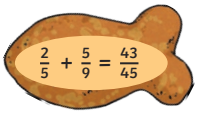


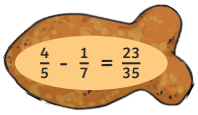










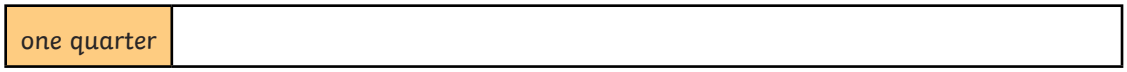


Prove if each calculation is true or false. Show your reasoning.

2)

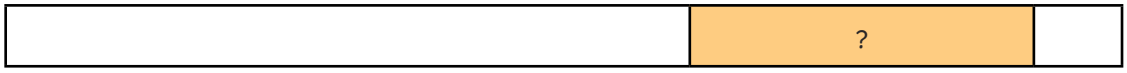
I think the shaded fraction of box C is five eighths.

a)

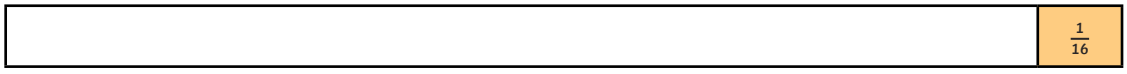


b)

c)

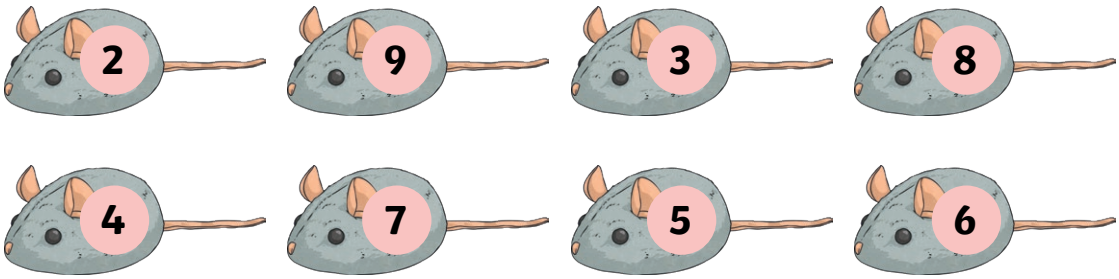


d)



Do you agree with Mildred the cat? Explain your reasoning.

1)



$$\frac{1}{\square} + \frac{\square}{12}$$

The cats have completed this calculation in different ways using only the digits above.

Are their statements correct? Prove it.

There are seven fraction calculations that have an answer with a denominator of 12.

a) _____

_____

There are six fraction calculations that have an answer with a numerator of 7.

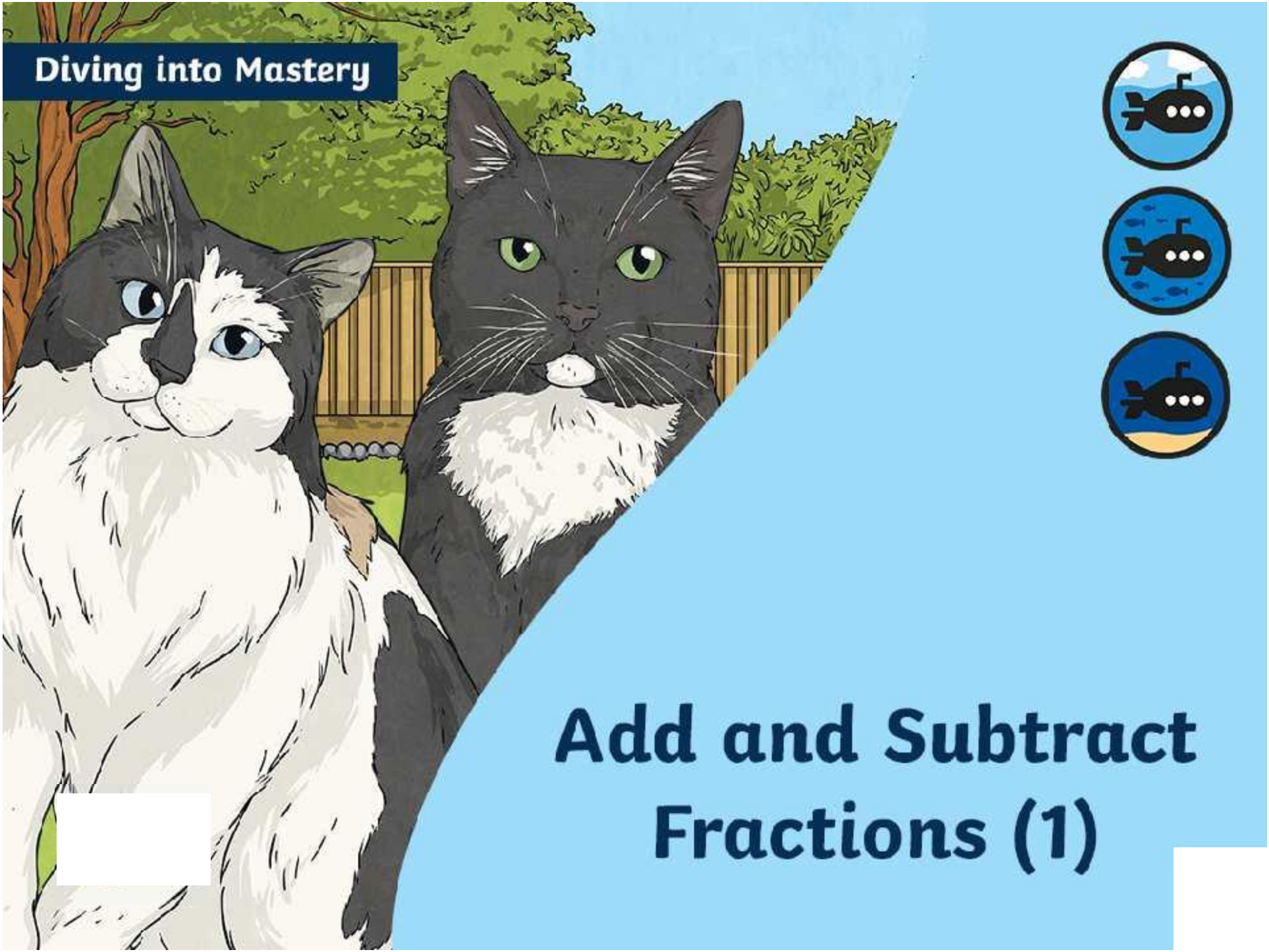
b) _____

_____

The biggest denominator number you can have in the answer is 84.

c) _____

_____


Diving into Mastery
Add and Subtract
Fractions (1)

Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:

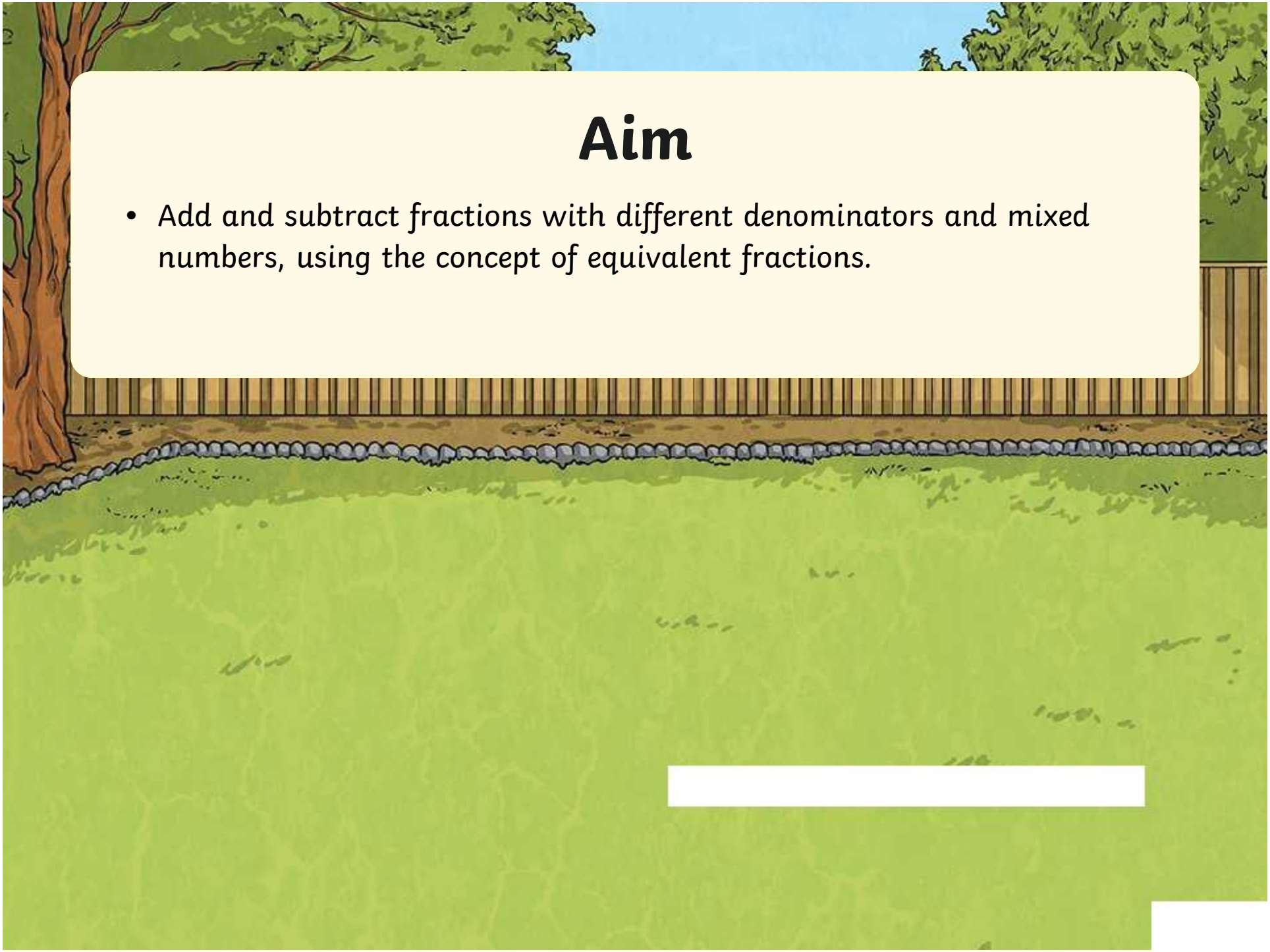
Diving

Deeper

Deepest

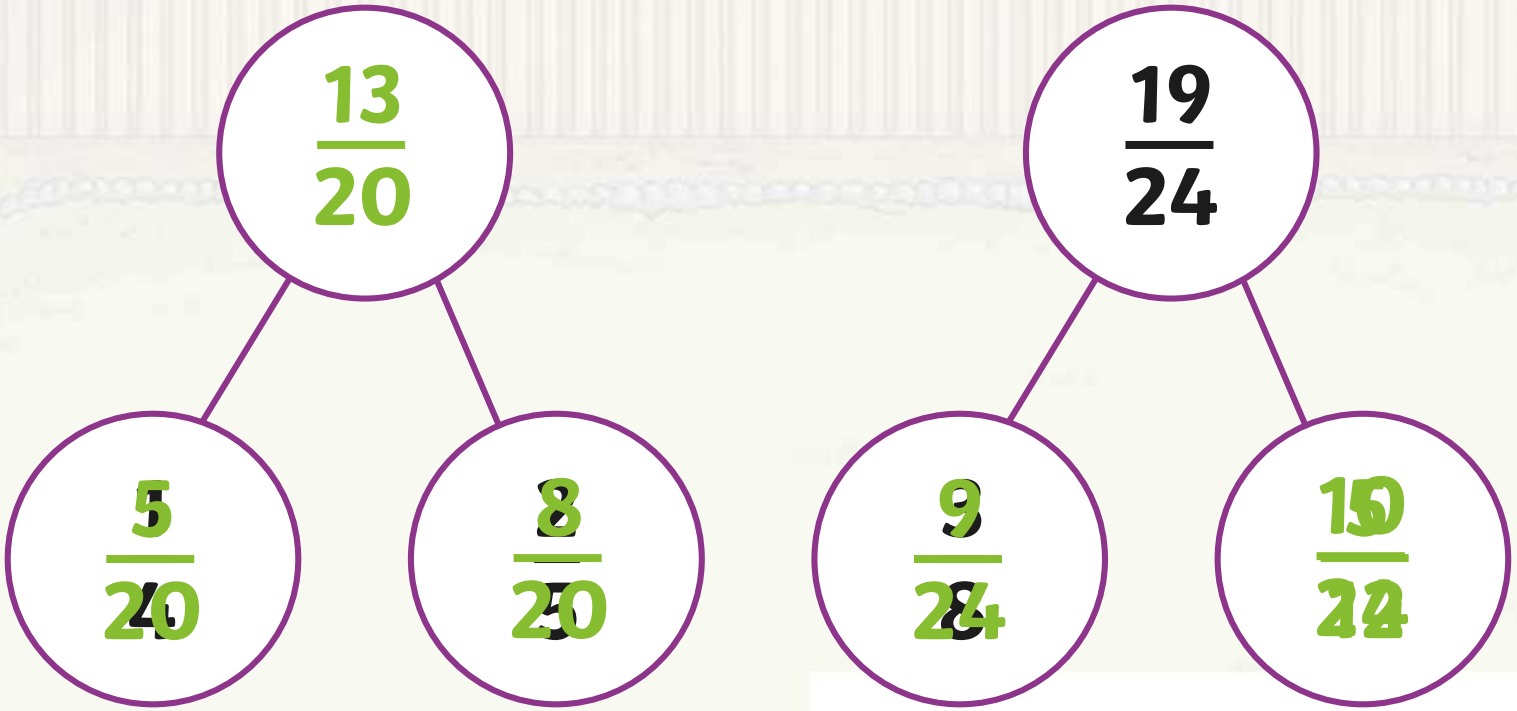
These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.


Aim
• Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.

Add and Subtract Fractions (1) | Diving

Complete these part-whole models. Show your working out using common denominators. Simplify fractions where possible.



Add and Subtract Fractions (1) | **Diving**

Here is a pile of cat treats.

Bella ate $\frac{5}{12}$ of the cat treats.

Milo ate $\frac{2}{9}$ of the cat treats.

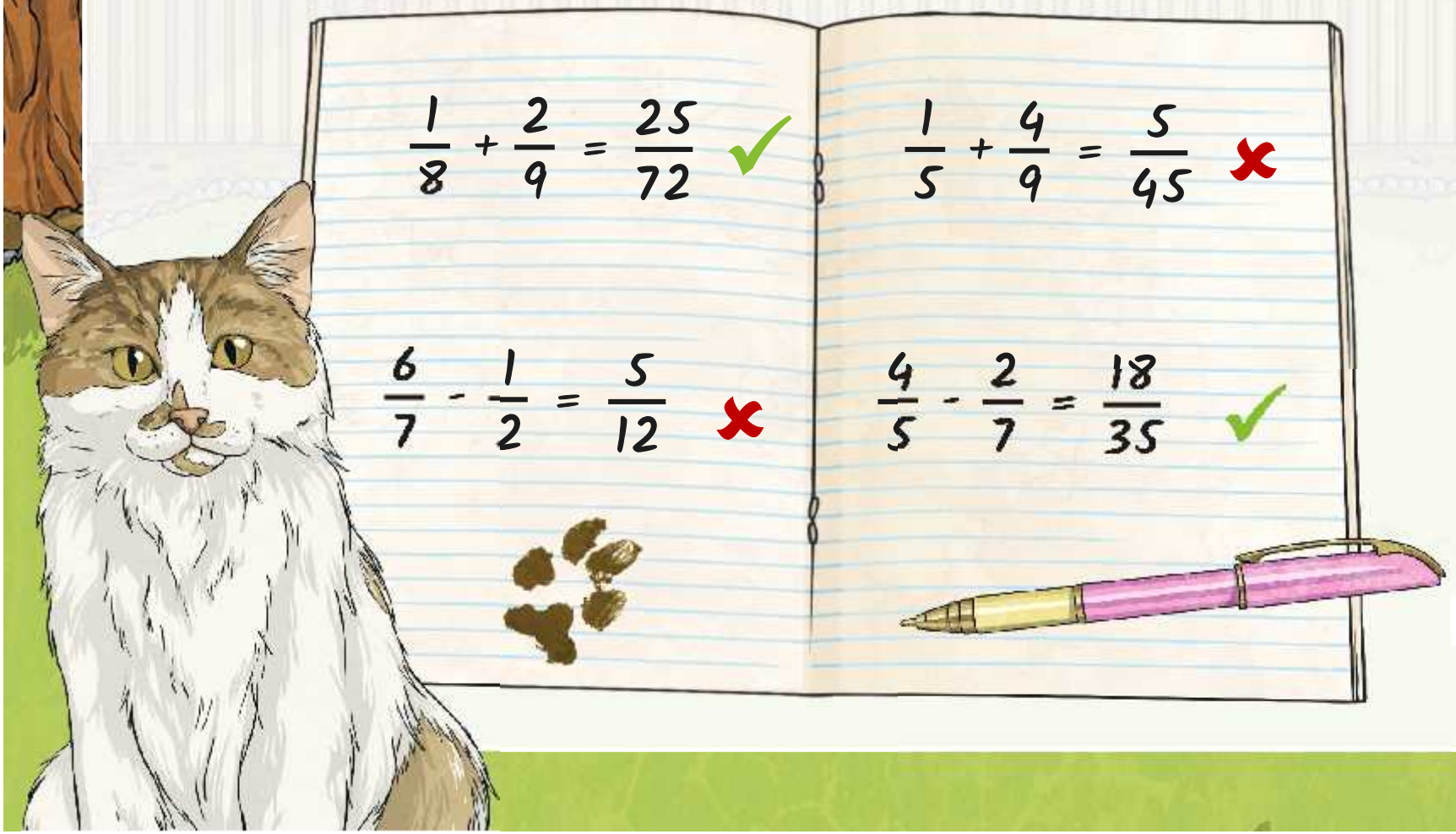
Oscar ate $\frac{1}{6}$ of the cat treats.

What fraction of the treats are left over?

$\frac{7}{36}$

Add and Subtract Fractions (1) | Deeper

Prove if the calculations are true or false.
Show your reasoning.



Add and Subtract Fractions (1) | Deeper

A, B, C and D total one whole.

A = ?	$B = \frac{2}{9}$	$C = \frac{1}{3}$	$D = \frac{1}{6}$

I think that A is five eighteenths.

Do you agree? Explain the method and reasoning.

This is correct as $B + C + D = \frac{13}{18}$.

$B = \frac{4}{18}$ $C = \frac{6}{18}$ $D = \frac{3}{18}$

$\frac{18}{18} - \frac{13}{18} = \frac{5}{18}$

Add and Subtract Fractions (1) | **Deepest**

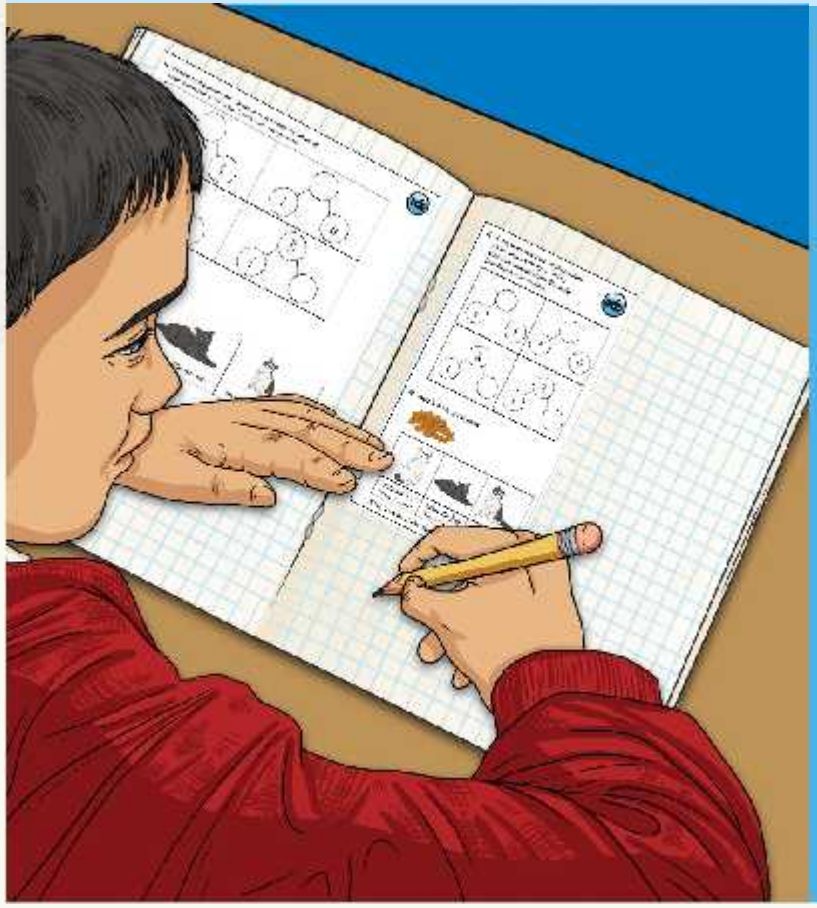
There are multiple possible answers. These include:

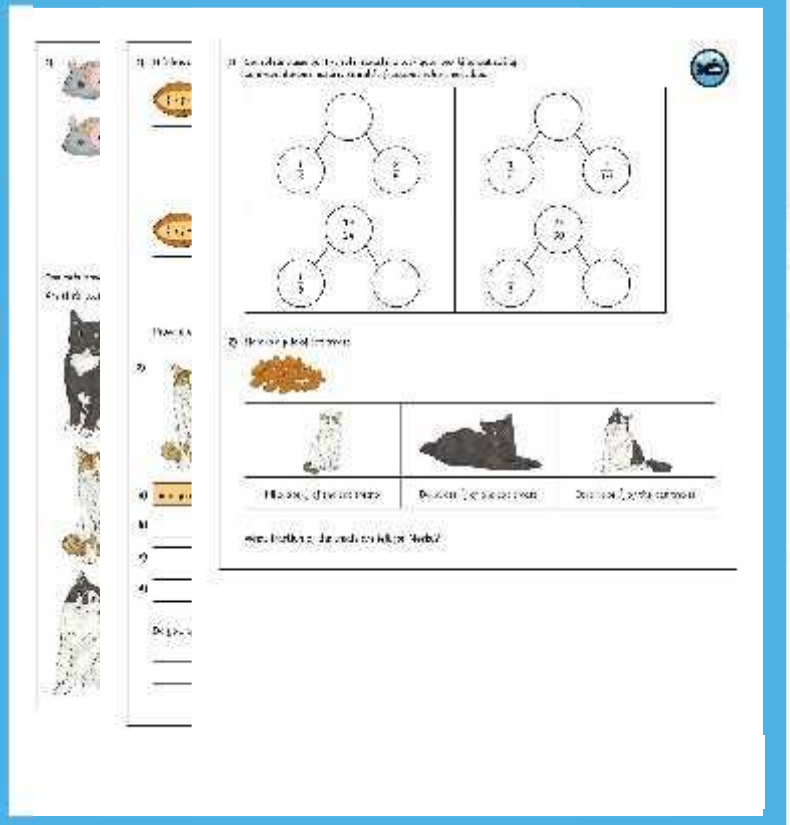
$$\frac{1}{4} + \frac{4}{9} = \frac{13}{36}$$

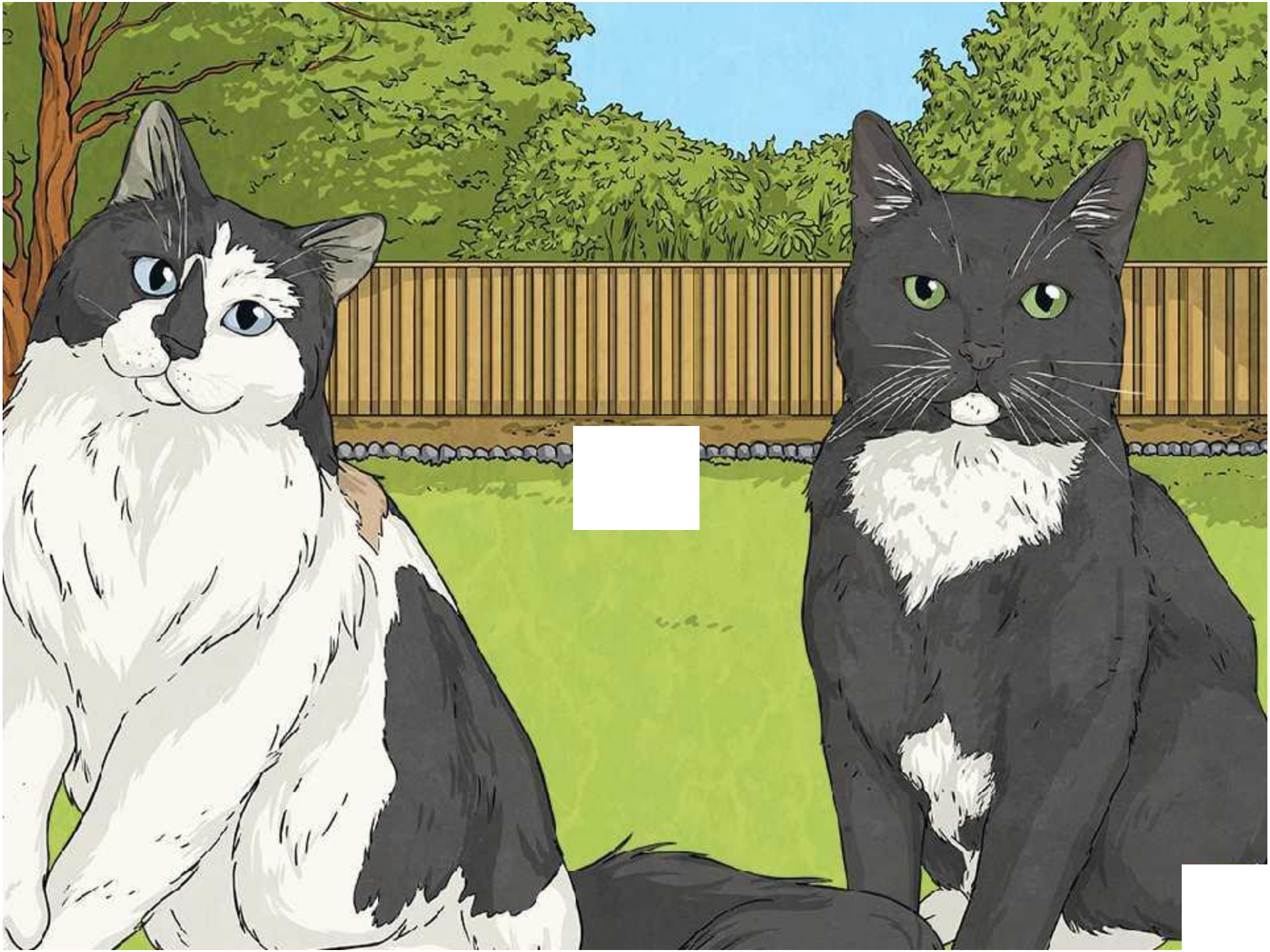
Challenge: Complete the calculation to make an answer that is a proper fraction with a denominator of 36 in its simplest form.

Add and Subtract Fractions (1)

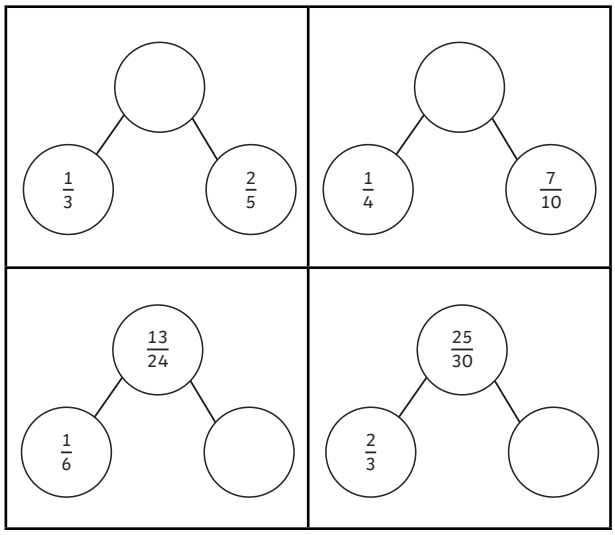
Dive in by completing your own activity!



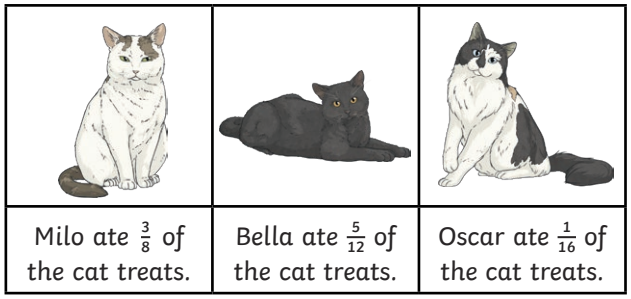




1) Complete these part-whole models. Show your working out using common denominators. Simplify fractions where possible.



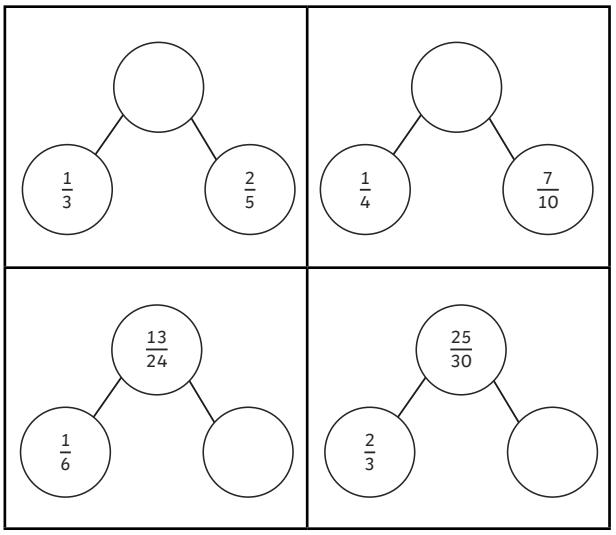
2) Here is a pile of cat treats.



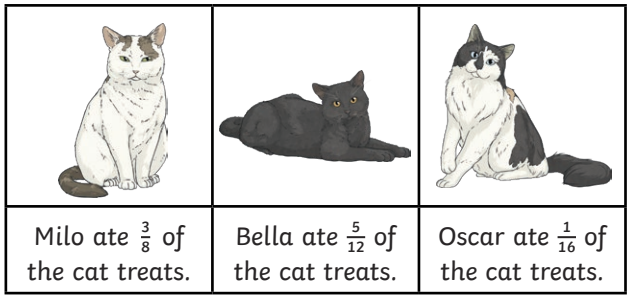
Milo ate $\frac{3}{8}$ of the cat treats.	Bella ate $\frac{5}{12}$ of the cat treats.	Oscar ate $\frac{1}{16}$ of the cat treats.

What fraction of the treats are left for Meeko?

1) Complete these part-whole models. Show your working out using common denominators. Simplify fractions where possible.



2) Here is a pile of cat treats.



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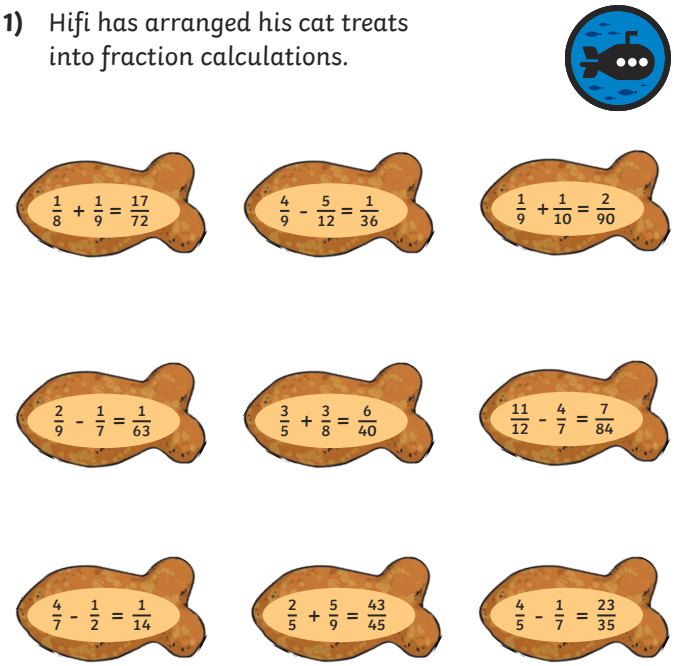
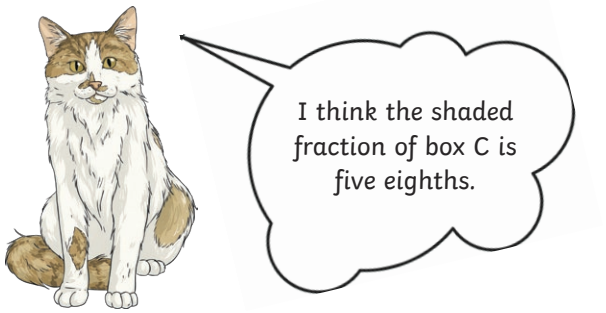
What fraction of the treats are left for Meeko?

1) Hifi has arranged his cat treats into fraction calculations.



Prove if each calculation is true or false. Show your reasoning.

2)



a) one quarter

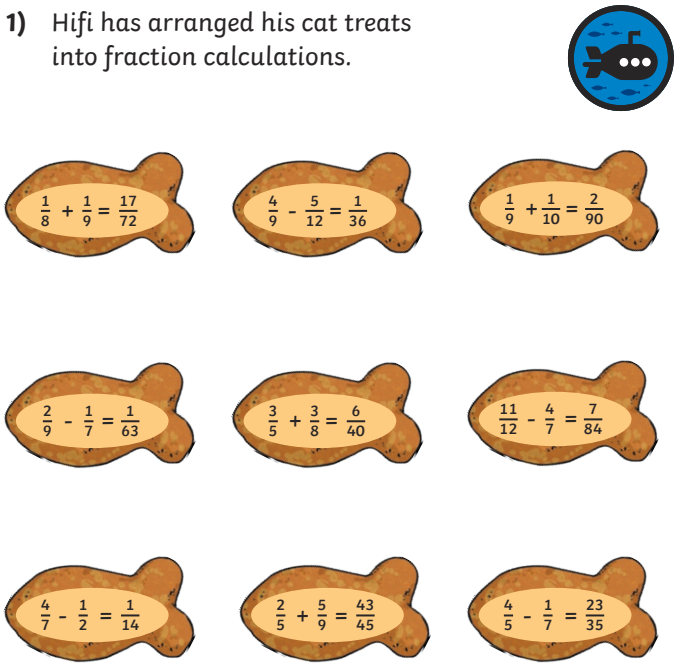
b) three eighths

c) ?

d) $\frac{1}{16}$

Do you agree with Mildred the cat? Explain your reasoning.

1) Hifi has arranged his cat treats into fraction calculations.



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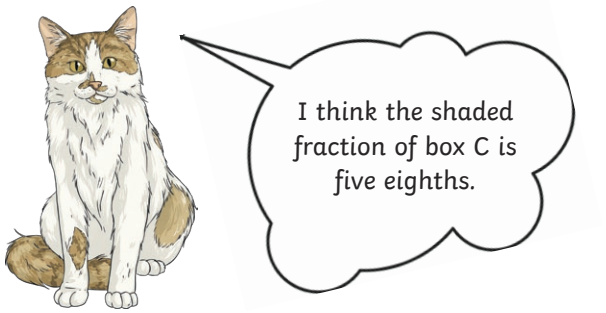
2)



a) one quarter

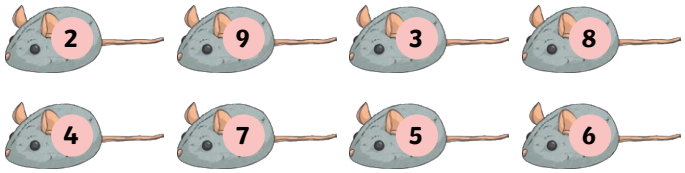
b) three eighths

c) ?

d) $\frac{1}{16}$

Do you agree with Mildred the cat? Explain your reasoning.

1)



$$\frac{1}{\square} + \frac{\square}{12}$$

The cats have completed this calculation in different ways using only the digits above.

Are their statements correct? Prove it.

a) 

There are seven fraction calculations that have an answer with a denominator of 12.

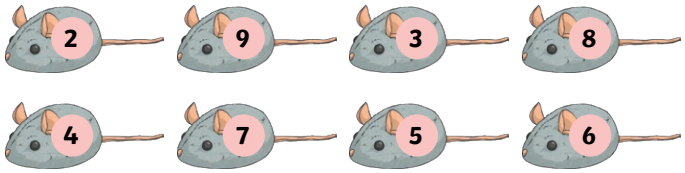
b) 

There are six fraction calculations that have an answer with a numerator of 7.

c) 

The biggest denominator number you can have in the answer is 84.

1)



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