

10.2.22

LO: To subtract proper fractions from mixed numbers.

I know that mixed numbers are comprised of whole numbers and remaining fractions.

I can subtract proper fractions from mixed numbers.

I understand that multiples must be used to find common denominators.

Flashback 4.

Year 5

Flashback 4

- 1) Work out $\frac{7}{30} + \frac{2}{15} + \frac{1}{3}$
- 2) What is $\frac{3}{10}$ less than $\frac{9}{10}$?
- 3) Change $7\frac{3}{10}$ to an improper fraction.
- 4) What is the value of the 2 in the number 6,3

Flashback 4

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- 4) What is the value of the 2 in the num



GET READY

1) Convert these mixed numbers to improper fractions.

$$5\frac{3}{5}$$

$$3\frac{8}{9}$$

2) Convert these improper fractions to mixed numbers.

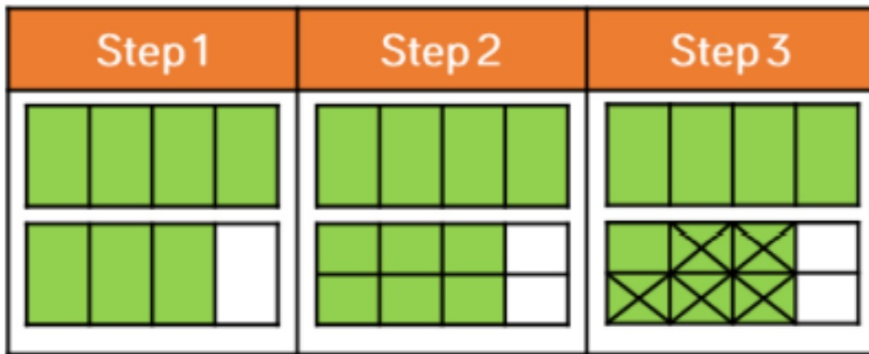
$$\frac{102}{10}$$

$$\frac{124}{12}$$



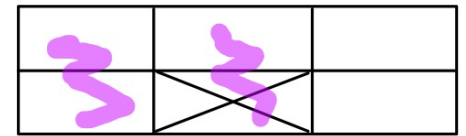
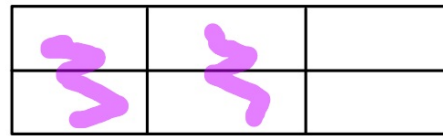
Talk through method

This is one method we could use:



$$1\frac{3}{4} - \frac{5}{8} = \boxed{}$$

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

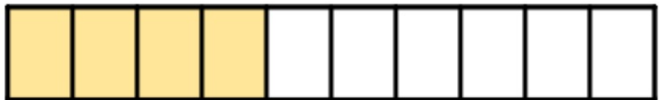
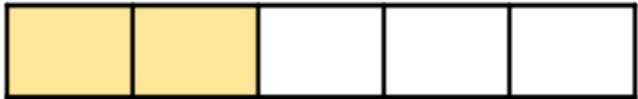


On whiteboards, use this method to work out:

$$1\frac{5}{6} - \frac{7}{12}$$

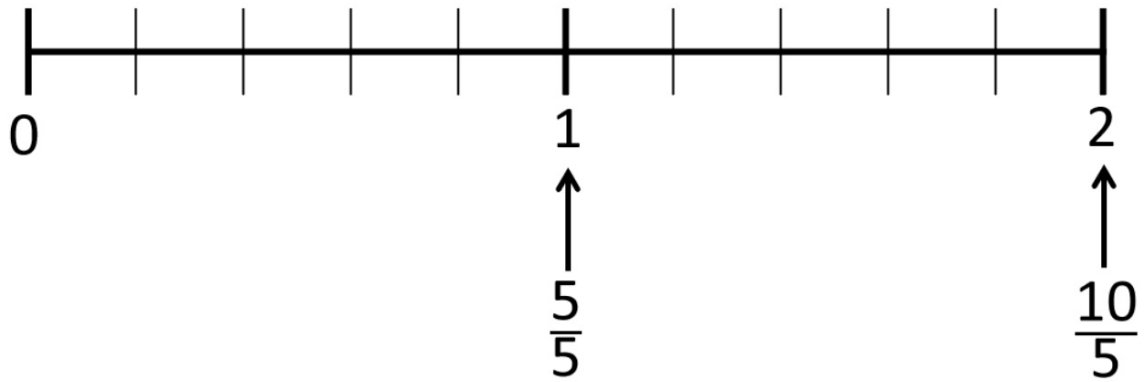
$$\frac{7}{5} - \frac{3}{10} =$$

How could we convert the fractions so they have the same denominator?



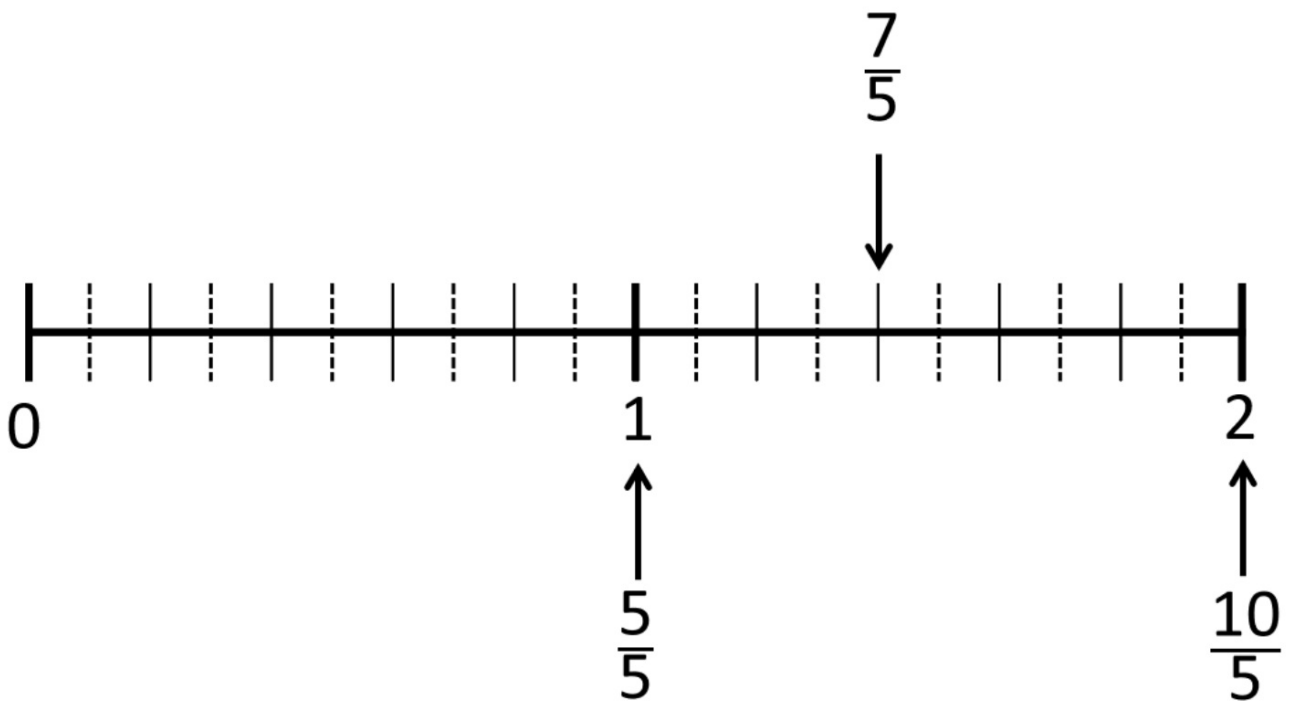
$$\frac{7}{5} - \frac{3}{10}$$

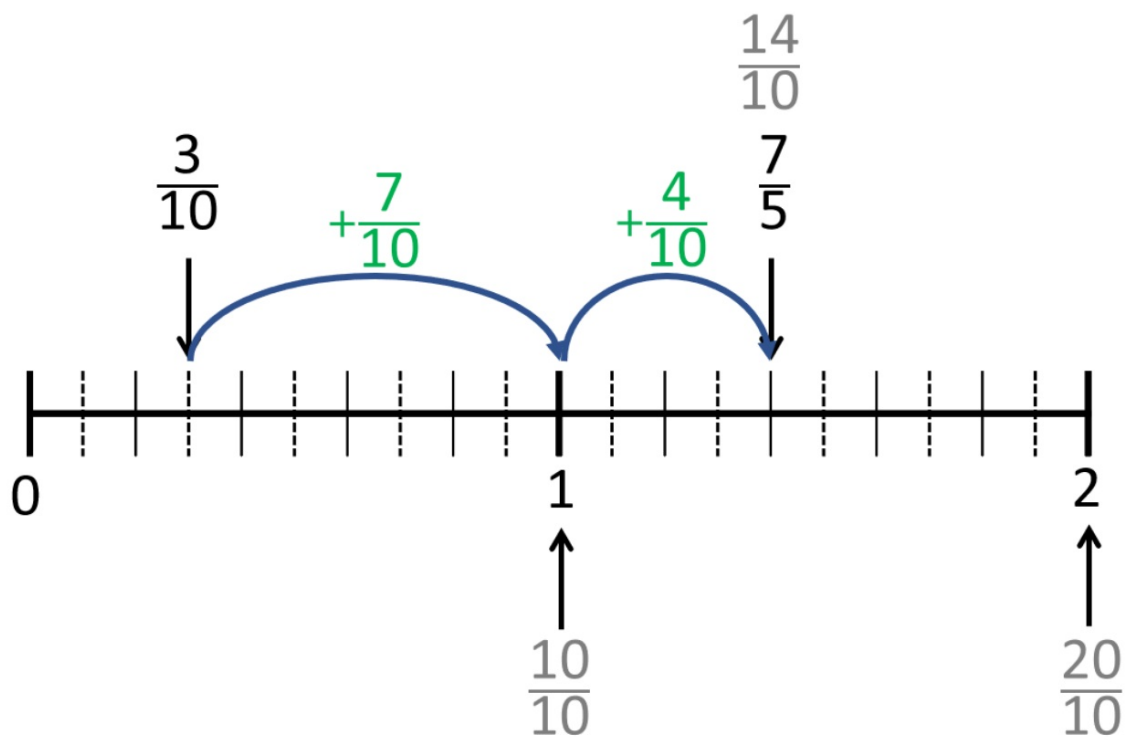
Place $\frac{7}{5}$ on the number line.



$$\frac{7}{5} - \frac{3}{10}$$

What should we convert the denominators into?





$$\frac{7}{10} + \frac{4}{10} =$$

$$\frac{11}{10}$$

What is this improper fraction as a mixed number?

Have a go at questions 1 - 3.

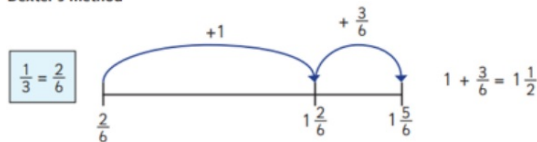
1 Complete the subtractions.

Use bar models to help you.

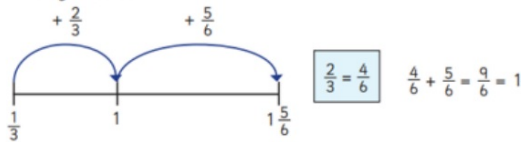
a) $\frac{15}{8} - \frac{1}{2} = \square$ b) $1\frac{7}{8} - \frac{3}{4} = \square$ c) $1\frac{1}{2} - \frac{3}{8} = \square$

2 Dexter and Whitney are using number lines to work out $1\frac{5}{6} - \frac{1}{3}$

Dexter's method



Whitney's method



What is the same and what is different about these methods?

Use one of the methods to work out $1\frac{5}{8} - \frac{3}{16}$

3 Complete the subtractions.

a) $3\frac{1}{4} - \frac{5}{24} = \square$
 b) $3\frac{3}{16} - \frac{1}{8} = \square$
 c) $2\frac{5}{6} - \frac{2}{3} = \square$

4 A jug contains $1\frac{3}{5}$ litres of orange juice.

Eva pours $\frac{4}{15}$ litres into a glass.

How much orange juice is left in the jug?

6 Three children take part in throwing competitions.

Here is the table of results.

	Javelin	Shot Put	Discus
Dexter	$15\frac{1}{4}$ m	$7\frac{5}{12}$ m	
Amir	$13\frac{3}{8}$ m		$12\frac{7}{8}$ m
Annie		9 m	$11\frac{5}{12}$ m

Use the clues to complete the table.

- Annie's javelin throw is $\frac{11}{12}$ m less than Dexter's.
- Amir's shot put throw is $\frac{3}{4}$ m less than Annie's.
- Dexter's discus throw is $\frac{1}{2}$ m less than Amir's.

5 B's:
Brain
Book
Board
Budd
Boss

Extension activity:

Amir is attempting to solve $2\frac{5}{14} - \frac{2}{7}$

Here is his working out:



$$2\frac{5}{14} - \frac{2}{7} = 2\frac{3}{7}$$

Do you agree with Amir?
Explain your answer.

Here
Wha

Can
Why

A race is $3\frac{2}{3}$ km in length.

How do we convert this fraction into sixths?

$3\frac{2}{3}$ km

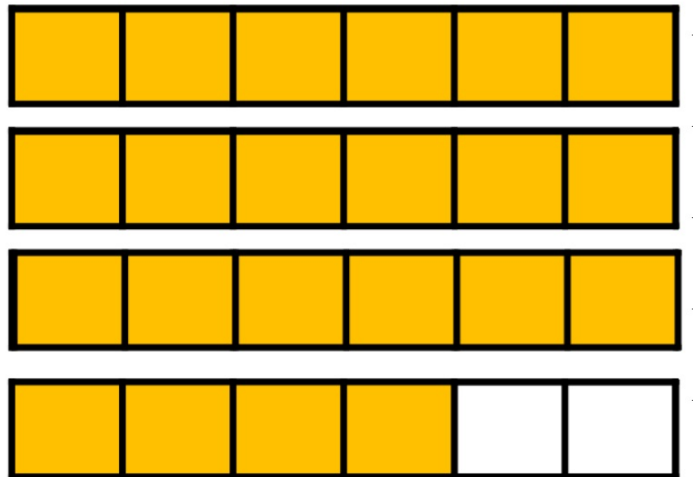


$$3\frac{2}{3} - \frac{1}{6} =$$

Annie has run $\frac{1}{6}$ km so far.

How much further does she have to run?

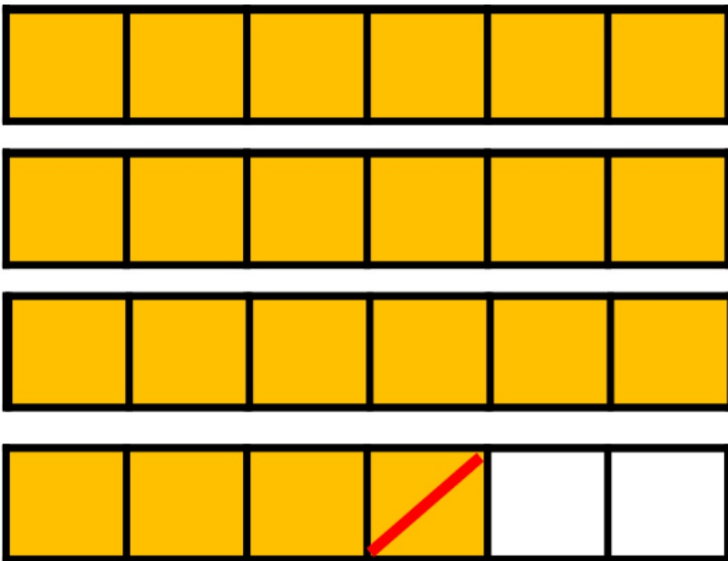
Have a think



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

$$\frac{4}{6}$$

What remaining fraction are we left with?

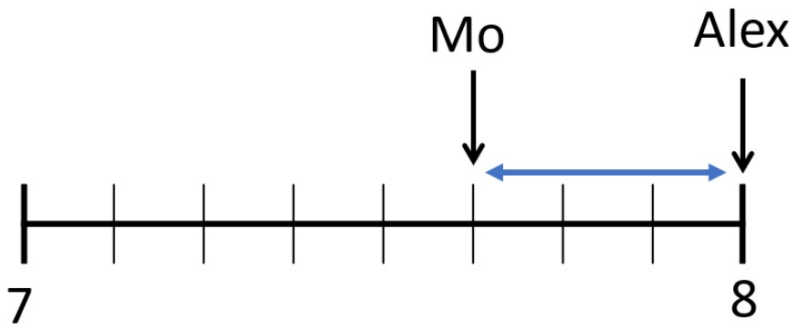


Alex cycles for 8 km.

Mo cycles for $7\frac{5}{8}$ km.

How much further does Alex cycle than Mo?

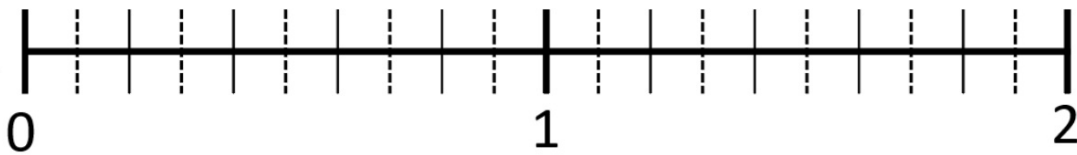
Have a think



Jack eats $1\frac{2}{5}$ of pie.

Dora eats $\frac{9}{10}$ of a pie less than Jack.

How much pie does Dora eat?



Have a go at questions 4 and 6.

1 Complete the subtractions.

Use bar models to help you.

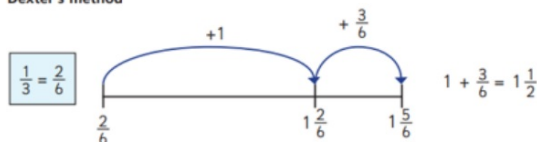
a) $\frac{15}{8} - \frac{1}{2} = \square$

b) $1\frac{7}{8} - \frac{3}{4} = \square$

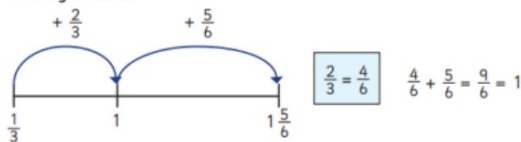
c) $1\frac{1}{2} - \frac{3}{8} = \square$

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Amir is attempting to solve $2\frac{5}{14} - \frac{2}{7}$

Here is his working out:



$2\frac{5}{14} - \frac{2}{7} = 2\frac{3}{7}$

Do you agree with Amir?
Explain your answer.

Here
Wha

Can
Why

Extension activity:

Amir is attempting to solve $2\frac{5}{14} - \frac{2}{7}$

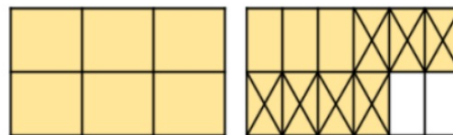
Here is his working out:



$$2\frac{5}{14} - \frac{2}{7} = 2\frac{3}{7}$$

Do you agree with Amir?
Explain your answer.

Here is Rosie's method.
What is the calculation?



Can you find more than one answer?
Why is there more than one answer?

True or False ?

Subtract mixed numbers

$$2\frac{5}{6} - \frac{5}{12} = 2\frac{0}{6}$$

False

$$2\frac{5}{6} - \frac{5}{12} = 2\frac{0}{6}$$

$$2\frac{5}{6} - \frac{5}{12} = 2\frac{10}{12} - \frac{5}{12} = 2\frac{5}{12}$$

**Year 5
NUMERACY
TARGET GRIDS**

I can read Roman numerals to 1000 (M) and recognise years written in numerals.

I can solve number problems and practical problems that involve all of the below.

I can round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.

I can use negative numbers in context; count forwards and backwards with positive and negative whole numbers through 0

I can count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.

I know what each digit represents in numbers to 1 000 000.

I can read, write, order and compare numbers to at least 1 000 000.

Number and Place Value

I can use all 4 rules of number to solve multi-step problems.

I can use rounding to check answers to calculations.

I can subtract mentally using increasingly large numbers.

I can add mentally using increasingly large numbers.

I can subtract numbers with up more than 4 digits

I can add whole numbers with more than 4 digits.

Addition and Subtraction

I can solve \times and \div problems, scaling by fractions and ratio.

I can solve problems involving \times and \div including factors, multiples square and cubes.

I can recognise and use square and cube numbers.

I can \times and \div whole numbers and decimals by 10, 100 and 1000.

I can multiply and divide numbers mentally.

I can divide numbers up to 4 digits by a one or two-digit number.

I can multiply numbers up to 4 digits by a one or two-digit number.

I can establish whether a number is prime and recall prime numbers up to 19.

I know and use the vocabulary of prime numbers, prime factors and composite.

I can identify multiples and factors including finding all factor pairs.

Multiplication and Division

I can use all four operations to solve problems involving measure using decimal notation, including scaling.

I can solve problems involving converting between units of time.

I can estimate the volume and capacity.

I can estimate the area of irregular shapes.

I can calculate and compare the area of rectangles (including squares)

I can measure and calculate the perimeter of composite rectilinear shapes in centimetres & metres.

I understand and use approximate equivalences between metric units and imperial units such as inches & pounds

I can convert between different units of metric measure.

Measurements

I can solve problems involving decimals to 3 decimal places.

I can read and order numbers with 3 decimal places.

I can round decimals with 2 decimal places to the nearest whole number & to one decimal place.

I can recognise and use 1000ths and relate them to 10ths, 100ths and decimal equivalents.

I can multiply proper fractions and mixed numbers by whole numbers.

I can $+$ and $-$ fractions with the same denominator and denominators that are multiples of the same number.

I can recognise mixed number and improper fractions and convert from one form to another.

I can identify, name and write equivalent fractions of a given fraction.

I can compare and order fractions whose denominators are all multiples of the same number.

Fractions

I can identify, describe and represent the position of a shape following a reflection or translation.

I can distinguish between regular and irregular polygons.

I can use the properties of rectangles to deduce related facts and find missing lengths and angles.

I can identify other multiples of 90°

I can identify angles at point on a straight line and $1/2$ a turn.

I can identify angles at a point and one whole turn.

I can draw angles and measure them in degrees ($^\circ$)

I know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles.

I can identify 3-D shapes, including cubes and other cuboids from 2-D drawings.

Geometry

I can read and write decimal numbers as fractions.

I can write $\frac{1}{10}$ as a fraction and decimal equivalents.

I can complete, read and interpret information in tables including timetables.

I can solve 'difference' problems using information presented in a line graph.

I can solve 'sum' problems using information presented in a line graph.

I can solve 'comparison' problems using information presented in a line graph.

Statistics