MOORSIDE

Year 6 Maths
22.01.2021- 26.02.2021
Answers

Monday

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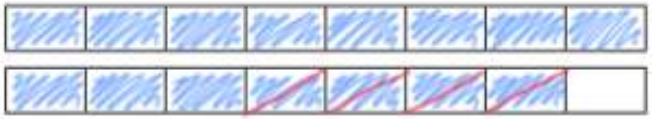
Subtract mixed numbers

White Rose Maths

1 Complete the subtractions.

Use the bar models to help you.

a)



$\frac{15}{8} - \frac{1}{2} =$ $1\frac{3}{8}$

b)

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

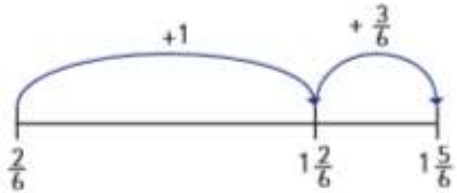
c)

$1\frac{1}{2} - \frac{3}{8} =$ $1\frac{1}{8}$

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

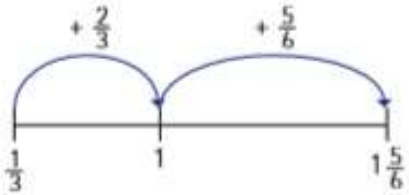
Dexter's method

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



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

Whitney's method



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

$\frac{4}{6} + \frac{5}{6} + \frac{9}{6} = 1\frac{1}{2}$

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

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

e.g.

$\frac{13}{16} + \frac{10}{16} = \frac{23}{16} = 1\frac{7}{16}$

$1\frac{5}{8} - \frac{3}{16} =$ $1\frac{7}{16}$

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3 Complete the subtractions.

a) $3\frac{1}{4} - \frac{5}{24} =$ $3\frac{1}{24}$

d) $7\frac{5}{6} - \frac{13}{24} =$ $7\frac{3}{24}$

b) $3\frac{3}{16} - \frac{1}{8} =$ $3\frac{1}{16}$

e) $4\frac{4}{9} - \frac{4}{27} =$ $4\frac{8}{27}$

c) $2\frac{5}{6} - \frac{2}{3} =$ $2\frac{1}{6}$

f) $6\frac{11}{12} - \frac{3}{4} =$ $6\frac{1}{2}$

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?

There are $1\frac{1}{3}$ litres of orange juice left in the jug.

5 Find three different ways to complete the calculation.

e.g.

$3\frac{1}{5} - \frac{5}{20} = 3\frac{1}{20}$

$3\frac{3}{5} - \frac{11}{20} = 3\frac{1}{20}$

$3\frac{2}{5} - \frac{7}{20} = 3\frac{1}{20}$

Are there any other ways to complete this calculation?

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	$12\frac{3}{8}$ m
Amir	$13\frac{3}{8}$ m	$8\frac{1}{2}$ m	$12\frac{7}{8}$ m
Annie	$14\frac{1}{3}$ m	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

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Subtract fractions

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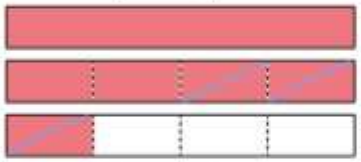
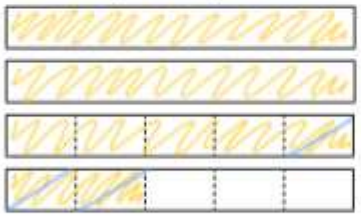
1 Complete the diagrams to show the subtractions.

a) $2\frac{1}{4} - \frac{3}{4} =$ $1\frac{1}{2}$



b) $3\frac{2}{5} - \frac{3}{5} =$ $2\frac{4}{5}$



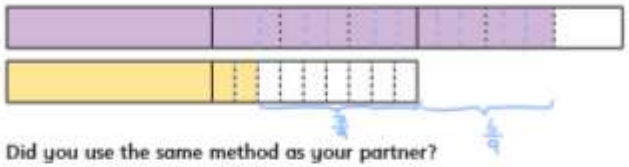
2 Draw a diagram to represent $3\frac{1}{6} - \frac{5}{6}$

Complete the calculation. $3\frac{1}{6} - \frac{5}{6} =$ $2\frac{7}{6}$ $(= 2\frac{1}{6})$

3 Complete the calculation.

$2\frac{2}{3} - 1\frac{2}{9} =$ $1\frac{4}{9}$

You can use the diagrams to help you.



Did you use the same method as your partner?

4 Complete the calculations.

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

c) $6\frac{1}{5} - 1\frac{3}{4} =$ $4\frac{9}{20}$

b) $4\frac{7}{20} - 2\frac{7}{10} =$ $1\frac{13}{20}$

d) $6\frac{5}{6} - 4\frac{2}{9} =$ $2\frac{11}{18}$

5 Complete the calculations.

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

$8 - 1\frac{1}{4} =$ $6\frac{3}{4}$

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

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

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

$8\frac{1}{8} - 1\frac{1}{4} =$ $6\frac{7}{8}$

$8\frac{1}{8} -$ $5\frac{1}{4}$ $= 2\frac{7}{8}$

8 $\frac{7}{8}$ $- 3\frac{1}{4} = 5\frac{5}{8}$

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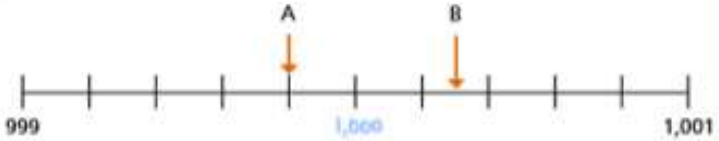
6 Filip has $4\frac{2}{5}$ kg of potatoes.

He has $2\frac{3}{4}$ kg of carrots.

How much heavier are the potatoes than the carrots?

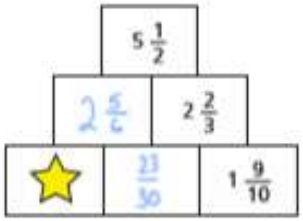
$1\frac{13}{20}$ kg

7 What is the difference between A and B?



$\frac{1}{2}$

8 In this addition pyramid, a number is the sum of the two numbers below it.

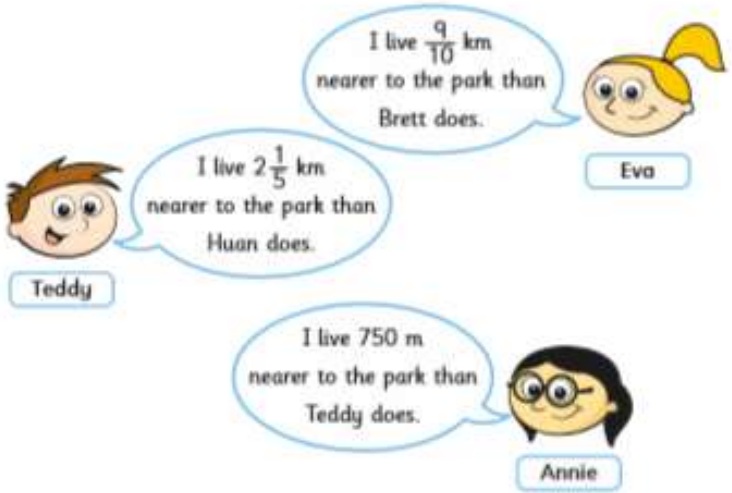


Work out the value of the star.

$2\frac{1}{15}$

9 The table shows the distance each child lives from the park.

Name	Annie	Brett	Teddy	Huan	Eva
Distance from park	$1\frac{3}{20}$ km	$3\frac{1}{4}$ km	$1\frac{9}{10}$ km	$4\frac{1}{10}$ km	$2\frac{3}{20}$ km



Complete the table.

Use the space below to show your workings.

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Mixed addition and subtraction

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1 Work out the calculations.

a) $\frac{2}{5} + \frac{3}{4} =$ $1\frac{3}{20}$

b) $2\frac{1}{4} - \frac{2}{3} =$ $1\frac{3}{12}$

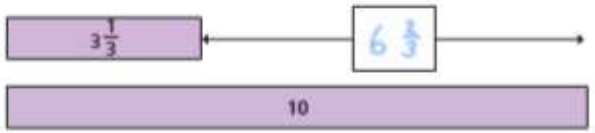
c) $3\frac{7}{10} - 2\frac{1}{4} =$ $1\frac{9}{20}$

2 Complete the calculation.

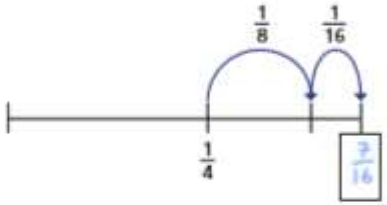
$\frac{5}{6} + 1\frac{2}{9} - \frac{1}{2} =$ $1\frac{5}{9}$

3 Work out the missing fractions.

a)



b)



4 Complete the calculations.

a) $\frac{2}{5} + \frac{1}{5} +$ $\frac{2}{5}$ $= 1$

b) $\frac{2}{5} + \frac{1}{5} +$ $\frac{9}{10}$ $= 1\frac{1}{2}$

c) $\frac{2}{5} + \frac{1}{5} +$ $\frac{11}{15}$ $= \frac{4}{3}$

d) $\frac{4}{5} =$ $1\frac{3}{5}$ $- \frac{4}{5}$

Wednesday

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5 Which of these are true and which are false?

Can you decide without having to do the additions or the subtractions?

Talk about your reasons with a partner.

	True or false?
$2\frac{1}{3} + 3\frac{3}{4}$ *is equal to* $3\frac{1}{3} + 2\frac{3}{4}$	True
$3\frac{3}{4} - \frac{1}{3}$ *is less than* $4\frac{3}{4} - 1\frac{1}{3}$	False
$3\frac{3}{4} - 2\frac{1}{3}$ *is equal to* $3\frac{1}{3} - 2\frac{3}{4}$	False

6 Complete the addition grid.

$1\frac{1}{4}$	$2\frac{1}{10}$	$\frac{1}{4}$	$= 3\frac{3}{5}$
$\frac{1}{25}$	$1\frac{3}{20}$	$2\frac{1}{5}$	$= 3\frac{39}{100}$
$3\frac{3}{5}$	$1\frac{1}{50}$	$1\frac{3}{100}$	$= 5\frac{9}{20}$
$= 4\frac{49}{100}$	$= 4\frac{27}{100}$	$= 3\frac{13}{25}$	

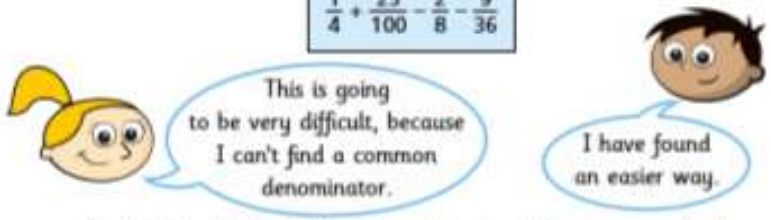
7 A painter uses the following mixtures.

How much more green paint does she have than purple paint?

$1\frac{1}{4}$

8 Eva and Amir are working out this calculation.

$$\frac{1}{4} + \frac{25}{100} - \frac{2}{8} - \frac{9}{36}$$



Find Amir's solution. Explain how this calculation can be solved.

All four fractions are equivalent to $\frac{1}{4}$ so the answer is 0

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Multiply fractions by integers

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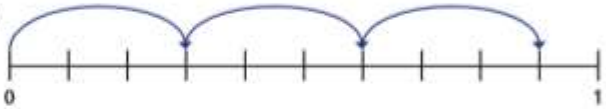
1 Complete the calculations.

a)

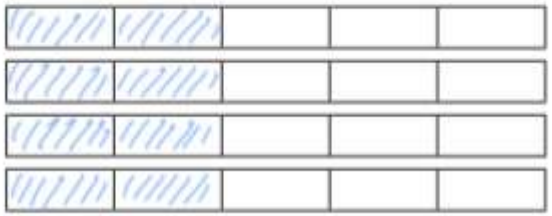
$\frac{2}{7} \times 2 = \frac{4}{7}$

b)



$3 \times \frac{3}{10} = \frac{9}{10}$

2 a) Shade the bar models to show $\frac{2}{5} \times 4$



b) Complete the multiplication.

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

3 Complete the calculations.

a) $\frac{1}{3} \times 1 = \frac{1}{3}$

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

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

$\frac{1}{3} \times 4 = 1\frac{1}{3}$

$\frac{1}{3} \times 5 = 1\frac{2}{3}$

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

b) $\frac{3}{4} \times 1 = \frac{3}{4}$

$\frac{3}{4} \times 2 = 1\frac{1}{2}$

$\frac{3}{4} \times 3 = 2\frac{1}{4}$

$\frac{3}{4} \times 4 = 3$

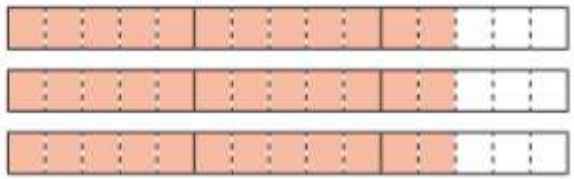
$\frac{3}{4} \times 5 = 3\frac{3}{4}$

$\frac{3}{4} \times 6 = 4\frac{1}{2}$

What patterns do you notice?

4 Complete the multiplication.

$2\frac{2}{5} \times 3 = 7\frac{1}{5}$



What method did you use? Is there a different method you could have used?

Thursday

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5 Match the calculations.

$\frac{2}{3} + \frac{2}{3}$	$\frac{1}{2} \times 6$
$\frac{1}{4} \times 24$	$18 \times \frac{1}{4}$
$\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4}$	$\frac{1}{6} \times 10$
$\frac{5}{12} \times 4$	$12 \times \frac{1}{2}$
$1\frac{1}{2} \times 3$	$\frac{1}{3} \times 4$

6 Write each answer as a mixed number in its simplest form.

a) $1\frac{1}{5} \times 2 =$ $2\frac{2}{5}$

b) $2\frac{1}{6} \times 3 =$ $6\frac{1}{2}$

c) $2\frac{2}{5} \times 4 =$ $9\frac{3}{5}$

d) $2\frac{2}{5} \times 5 =$ 12

e) $7 \times 3\frac{1}{2} =$ $24\frac{1}{2}$

f) $\frac{11}{15} \times 7 =$ $5\frac{2}{15}$

7 Fill in the missing numbers.

a) $2\frac{\boxed{2}}{7} \times 3 = 6\frac{6}{7}$

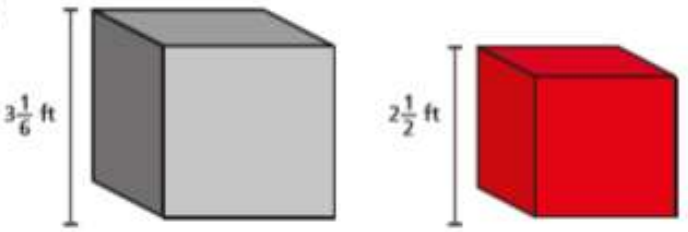
b) $2\frac{\boxed{4}}{8} \times 3 = 7\frac{1}{2}$

8 Tommy's dog eats $3\frac{1}{2}$ tins of food a week.

How many tins does she eat in a year?

182

9



Jack builds a tower using grey blocks.

Alex builds a tower using red blocks.

The towers are exactly the same height.

How many blocks could they each have used?

Jack could use 15 and Alex use 19

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Multiply fractions by fractions

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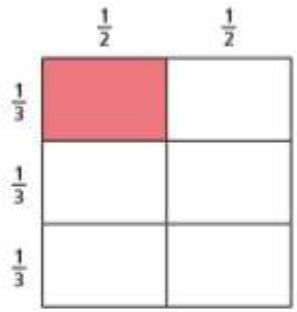
1 Dexter works out $\frac{1}{2} \times \frac{1}{3}$ using a grid method.



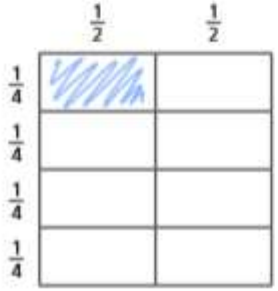
Explain how this shows $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$

Split into halves vertically and thirds horizontally. $\frac{1}{6}$ of the whole shape is shaded.

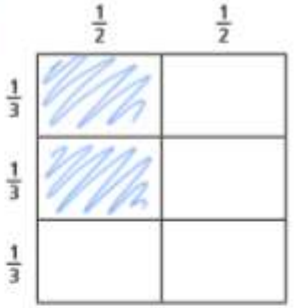
2 Shade the diagrams to show the fraction multiplications.

Complete the multiplications.

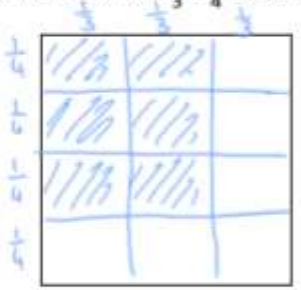
a) $\frac{1}{2} \times \frac{1}{4} = \boxed{\frac{1}{8}}$



b) $\frac{1}{2} \times \frac{2}{3} = \boxed{\frac{2}{6}} = \frac{1}{3}$



3 a) Divide the square to show that $\frac{2}{3} \times \frac{3}{4}$ is equal to $\frac{6}{12}$



b) Mo says $\frac{2}{3} \times \frac{3}{4}$ is equal to $\frac{1}{2}$

Is Mo correct? Yes

Explain your answer.

$\frac{6}{12}$ is equivalent to $\frac{1}{2}$

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4 Complete the calculations.

a) $\frac{1}{4} \times \frac{1}{5} = \boxed{\frac{1}{20}}$

b) $\frac{1}{5} \times \frac{1}{6} = \boxed{\frac{1}{30}}$

c) $\boxed{\frac{1}{56}} = \frac{1}{7} \times \frac{1}{8}$

d) $\frac{1}{8} \times \frac{1}{9} \times \frac{1}{10} = \boxed{\frac{1}{720}}$

e) $\frac{3}{4} \times \frac{1}{5} = \boxed{\frac{3}{20}}$

f) $\frac{2}{5} \times \frac{5}{6} = \boxed{\frac{1}{3}}$

g) $\frac{5}{7} \times \frac{5}{8} = \boxed{\frac{25}{56}}$

h) $\frac{3}{8} \times \frac{2}{9} \times \frac{3}{10} = \boxed{\frac{1}{40}}$

5 Use the diagram to complete the calculations.

a) $\frac{1}{3}$ of $\frac{1}{4} = \boxed{\frac{1}{12}}$

b) $\frac{2}{3}$ of $\frac{3}{4} = \boxed{\frac{1}{2}}$

c) What do you notice about your answers?

Talk to your partner.

6 Fill in the missing numbers.

a) $\frac{1}{10} = \frac{1}{2} \times \frac{1}{\boxed{5}}$

b) $\frac{1}{5} \times \frac{\boxed{2}}{3} = \frac{2}{15}$

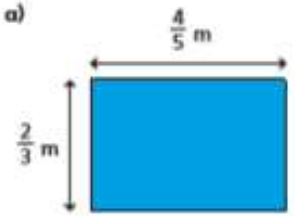
7 Fill in the missing numbers.

a) $\frac{1}{10} = \frac{\boxed{1}}{4} \times \frac{\boxed{2}}{5}$

b) $\frac{1}{4} = \frac{\boxed{1}}{4} \times \frac{\boxed{5}}{5}$

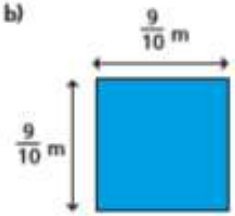
8 Calculate the area of the shapes.

a)



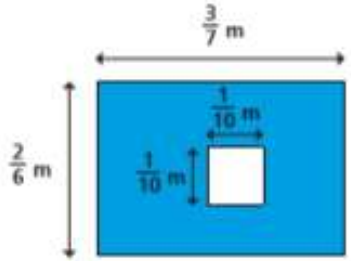
Area = $\boxed{\frac{8}{15}}$ m²

b)



Area = $\boxed{\frac{81}{100}}$ m²

9 Work out the area of the shaded part.



$\boxed{\frac{93}{700}\ m^2}$

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