Answers for Y6 Maths (wb 11.05.20)

Morning Mental Maths

	Monday		Tuesday		Wednesday		Thursday		Friday
1.	32,312	11.	223,996	21.	69,020	31.	222,732	41.	59,500
2.	94.93	12.	48.67	22.	142.39	32.	1020.01	42.	1679.29
3.	40	13.	180	23.	200	33.	190	43.	220
4.	120	14.	150	24.	325	34.	465	44.	475
5.	90	15.	198	25.	144	35.	220	45.	136
6.	8	16.	200	26.	500	36.	800	46.	4
7.	n = 5	17.	n = 14	27.	n = 11	37.	n = 20	47.	n = 300
8.	15.66	18.	16.66	28.	42	38.	63.3	48.	161.66
9.	0.18	19.	0.8	29.	0.3	39.	0.29	49.	0.83
10.	125	20.	398	30.	511	40.	403	50.	719

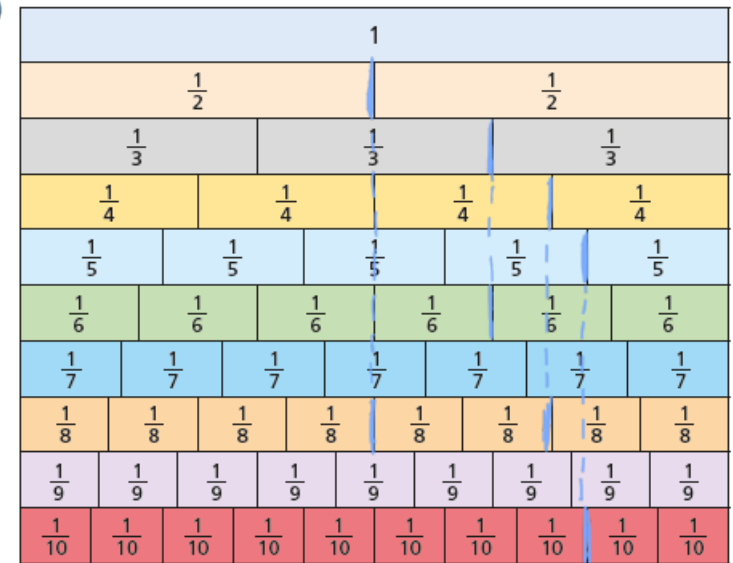## Monday

Answers provided at end of download

Tuesday

2. a) Use a fraction wall to explain why $\frac{7}{10}$ does not simplify.

It is already in its simplest form.

b) Find three more fractions on the fraction wall that cannot be simplified.

e.g. $\frac{2}{3}$ $\frac{3}{7}$ $\frac{9}{10}$

1

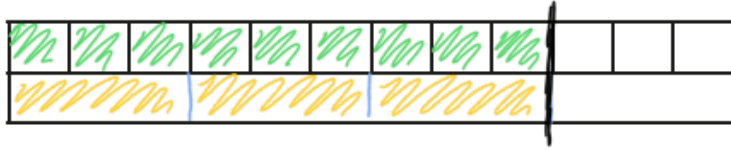Use the fraction wall to write each fraction in its simplest form.

a) $\frac{4}{6} = \frac{2}{3}$
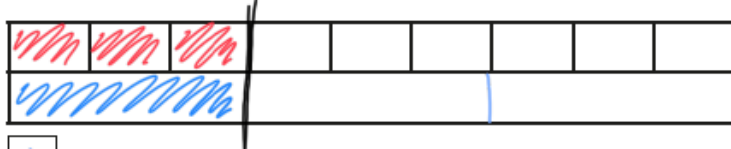
b) $\frac{8}{10} = \frac{4}{5}$

c) $\frac{6}{8} = \frac{3}{4}$

d) $\frac{4}{8} = \frac{1}{2}$

4 a) Draw lines on the bar model to show that $\frac{9}{12}$ is equal to $\frac{3}{4}$

b) Complete each bar model and calculation.

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

$$\frac{1}{3} = \frac{5}{15}$$

5 Simplify the fractions.

a) $\frac{4}{12} = \boxed{\frac{1}{3}}$ b) $\frac{8}{12} = \boxed{\frac{2}{3}}$ c) $\frac{40}{120} = \boxed{\frac{1}{3}}$ d) $\frac{12}{4} = \boxed{3}$

$\frac{4}{16} = \boxed{\frac{1}{4}}$ $\frac{8}{16} = \boxed{\frac{1}{2}}$ $\frac{40}{160} = \boxed{\frac{1}{4}}$ $\frac{120}{4} = \boxed{30}$

$\frac{4}{20} = \boxed{\frac{1}{5}}$ $\frac{8}{20} = \boxed{\frac{2}{5}}$ $\frac{40}{200} = \boxed{\frac{1}{5}}$ $\frac{12}{400} = \boxed{\frac{3}{100}}$

Describe and explain any patterns that you noticed.

Various answers

6 Write 3 fractions that simplify to $\frac{3}{5}$

e.g. $\boxed{\frac{6}{10}}$ $\boxed{\frac{9}{15}}$ $\boxed{\frac{12}{20}}$

7 Teddy and Dora are both simplifying $\frac{30}{42}$

Teddy

$$\frac{30}{42} = \frac{15}{21} = \frac{5}{7}$$

Dora

$$\frac{30}{42} = \frac{5}{7}$$

a) How do you think Dora was able to simplify the fraction in one step?

b) Simplify these fractions in one step.

$\frac{24}{30} = \boxed{\frac{4}{5}}$ $\frac{16}{20} = \boxed{\frac{4}{5}}$

$\frac{56}{64} = \boxed{\frac{7}{8}}$ $\frac{99}{121} = \boxed{\frac{9}{11}}$

8 $\frac{\bigstar}{\heartsuit}$ ★ is a prime number.   ♥ is a multiple of 10

The fraction can be simplified.
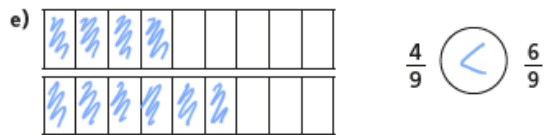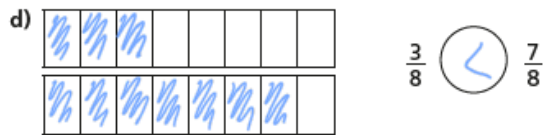
What could each number be? Explain your reasoning.

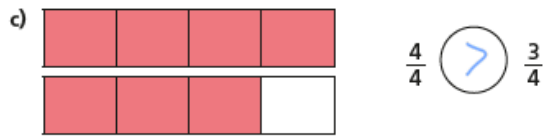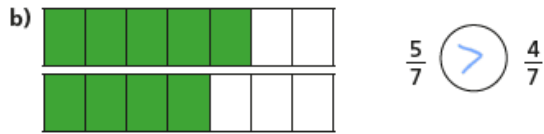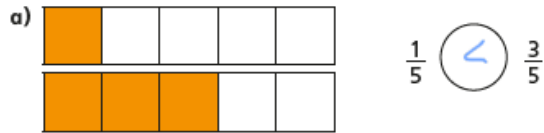E.g.   2 is prime, 20 is a multiple of 10

and $\frac{2}{20} = \frac{1}{10}$

so star could be 2 and heart could be 20

Wednesday

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

Use the bar models to help you.

a)

$\frac{1}{5}$ ⬤< $\frac{3}{5}$

b)

$\frac{5}{7}$ ⬤> $\frac{4}{7}$

c)

$\frac{4}{4}$ ⬤> $\frac{3}{4}$

d)

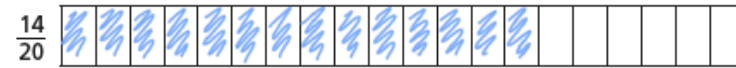$\frac{3}{8}$ ⬤< $\frac{7}{8}$

e)

$\frac{4}{9}$ ⬤< $\frac{6}{9}$

f) What do you notice about your answers?

g) Complete the sentence.

When the denominators are the same, the _greater_
the numerator, the _greater_ the fraction.   (or smaller/
                                                  smaller)

2 a) Colour the bar models to show the fractions.

$\frac{14}{20}$

$\frac{9}{10}$

$\frac{4}{5}$

$\frac{3}{4}$

b) Use the bar models to sort these fractions in order from greatest to smallest.

$\frac{14}{20}$ $\frac{9}{10}$ $\frac{4}{5}$ $\frac{3}{4}$

$\boxed{\frac{9}{10}}$ $\boxed{\frac{4}{5}}$ $\boxed{\frac{3}{4}}$ $\boxed{\frac{14}{20}}$

greatest   smallest

c) Order the fractions from smallest to greatest.

$\frac{7}{10}$ $\frac{1}{2}$ $\frac{2}{5}$ $\frac{3}{10}$

$\boxed{\frac{3}{10}}$ $\boxed{\frac{2}{5}}$ $\boxed{\frac{1}{2}}$ $\boxed{\frac{7}{10}}$

smallest   greatest

3 Amir is comparing the fractions $\frac{4}{15}$ and $\frac{3}{10}$

$$\frac{4}{15} = \frac{8}{30} \qquad \frac{3}{10} = \frac{9}{30}$$

$\frac{9}{30}$ is greater than $\frac{8}{30}$

$\frac{3}{10}$ is greater than $\frac{4}{15}$

Explain Amir's method.

Amir used equivalent fractions to find a common denominator and then compared the numerators.

4 Ron and Rosie are practising penalties.

Ron scored 7 out of 10.

Rosie scored 23 out of 30

I scored more than you, so I should take penalties for the school team.

I did not miss as many as you, so I should take the penalties.

Compare fractions to explain who should take penalties for the school team.

$\frac{7}{10} = \frac{21}{30} \qquad \frac{23}{30} > \frac{21}{30}$ Rosie should take penalties for the school team.

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

a) $\frac{3}{4}$ $<$ $\frac{5}{6}$

b) $\frac{2}{3}$ $>$ $\frac{5}{9}$

c) $\frac{2}{3}$ $<$ $\frac{7}{8}$

d) $\frac{3}{5}$ $<$ $\frac{5}{7}$

e) $\frac{9}{10}$ $>$ $\frac{3}{4}$

f) $\frac{9}{10}$ $<$ $\frac{19}{20}$

Write < or > to compare the fractions.

a) $\frac{1}{7}$ $>$ $\frac{1}{9}$

b) $\frac{4}{5}$ $>$ $\frac{4}{7}$

c) $\frac{3}{13}$ $<$ $\frac{3}{8}$

d) $\frac{11}{12}$ $<$ $\frac{11}{11}$

e) $\frac{19}{5}$ $>$ $\frac{19}{6}$

f) $\frac{107}{53}$ $<$ $\frac{107}{40}$

7 Write <, > or = to complete each statement.

a) $\dfrac{2}{5}$ $\boxed{<}$ $1\dfrac{1}{3}$ b) $\dfrac{2}{5}$ $\boxed{<}$ $\dfrac{6}{11}$ c) $3\dfrac{2}{3}$ $\boxed{>}$ $\dfrac{11}{4}$

$1\dfrac{2}{5}$ $\boxed{>}$ $\dfrac{1}{3}$ $1\dfrac{2}{5}$ $\boxed{<}$ $3\dfrac{6}{11}$ $11\dfrac{2}{9}$ $\boxed{<}$ $\dfrac{101}{3}$

$1\dfrac{2}{5}$ $\boxed{>}$ $1\dfrac{1}{3}$ $3\dfrac{2}{5}$ $\boxed{<}$ $3\dfrac{6}{11}$ $11\dfrac{1}{9}$ $\boxed{<}$ $\dfrac{100}{8}$

$\dfrac{12}{5}$ $\boxed{<}$ $\dfrac{12}{3}$ $\dfrac{12}{5}$ $\boxed{<}$ $\dfrac{36}{11}$ $27\dfrac{3}{4}$ $\boxed{<}$ $\dfrac{111}{3}$
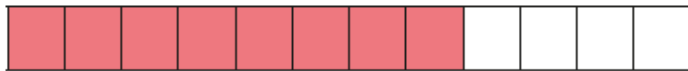
1 Amir is using fraction strips to work out $\frac{2}{3} + \frac{1}{4}$

Amir says he needs to find a common denominator.

a) Complete Amir's method.

$\frac{2}{3} = \frac{8}{12}$

$\frac{1}{4} = \frac{3}{12}$

$\frac{2}{3} + \frac{1}{4} = \frac{8}{12} + \frac{3}{12} = \frac{11}{12}$

b) Show the addition on the fraction strip.

c) Could you have used a different denominator?

2 What common denominator can you use to add the fractions?

a) $\frac{2}{5} + \frac{1}{2}$ Common denominator = 10

b) $\frac{2}{3} + \frac{4}{5}$ Common denominator = 15

c) $\frac{7}{8} - \frac{1}{4}$ Common denominator = 8

d) $\frac{7}{9} - \frac{1}{6}$ Common denominator = 18

e) $\frac{11}{15} + \frac{3}{10}$ Common denominator = 30

3 Ron and Eva are working out $\frac{1}{4} + \frac{5}{6}$

Ron's method

$\frac{1}{4} + \frac{5}{6} = \frac{3}{12} + \frac{10}{12} = \frac{13}{12}$

Eva's method

$\frac{1}{4} + \frac{5}{6} = \frac{6}{24} + \frac{20}{24} = \frac{26}{24}$

a) What is the same about Ron's and Eva's methods?

They both found a common denominator.

b) What is different about their methods?

They used a different common denominator.

c) Which method do you prefer? Why?

4 Complete the calculations.

a) $\frac{1}{5} + \frac{3}{4} = \boxed{\frac{19}{20}}$

c) $\frac{1}{2} - \frac{1}{7} = \boxed{\frac{5}{14}}$

b) $\frac{7}{8} - \frac{1}{3} = \boxed{\frac{13}{24}}$

d) $\frac{11}{18} + \frac{7}{12} = \boxed{1\frac{7}{36}}$

7 Complete the additions.

Give your answers as mixed numbers and as improper fractions.

a) $\frac{4}{5} + \frac{5}{4} = \boxed{\frac{41}{20}} = \boxed{2\frac{1}{20}}$

c) $\frac{9}{8} + \frac{8}{9} = \boxed{\frac{145}{72}} = \boxed{2\frac{1}{72}}$

b) $\frac{2}{3} + \frac{3}{2} = \boxed{\frac{13}{6}} = \boxed{2\frac{1}{6}}$

d) $\boxed{2\frac{4}{15}} = \boxed{\frac{34}{15}} = \frac{5}{3} + \frac{3}{5}$

What patterns do you notice?

8 Look at these additions.

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

$$\frac{1}{2} + \frac{1}{3} + \frac{1}{4} = \boxed{}$$

$$\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} = \boxed{}$$

a) When does this pattern first give an answer greater than 2?

$\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6} + \frac{1}{7} + \frac{1}{8} + \frac{1}{9} + \frac{1}{10} + \frac{1}{11}$

b) Do you think the pattern will ever give an answer greater than 100?

Friday

1 Work out the calculations.
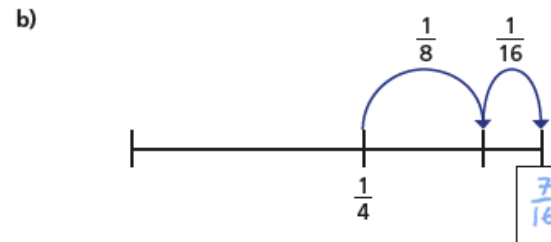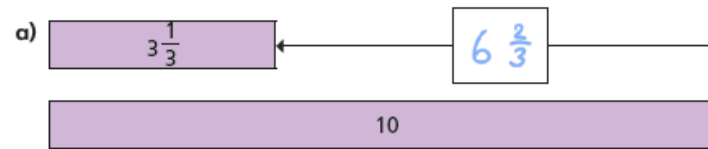
a) $\frac{2}{5} + \frac{3}{4} = \boxed{1\frac{3}{20}}$

b) $2\frac{1}{4} - \frac{2}{3} = \boxed{1\frac{7}{12}}$

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

2 Complete the calculation.

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

3 Work out the missing fractions.

a)

b)

4 Complete the calculations.

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

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

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

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

5 Which of these are true and which are false?

Can you decide without having to do the additions or the subtractions?
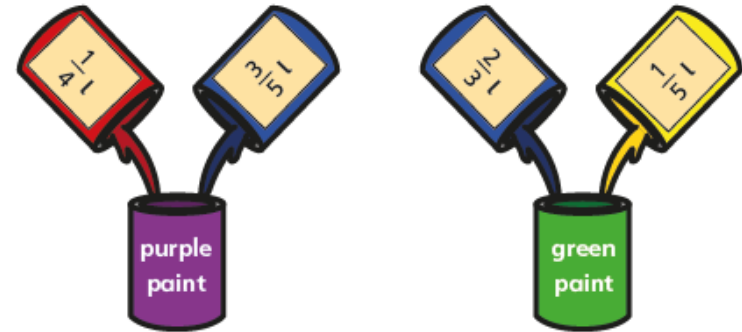
Talk about your reasons with a partner.

	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.

$1\frac{1}{4}$	$2\frac{1}{10}$	$\frac{1}{4}$	$= 3\frac{3}{5}$
$\frac{1}{25}$	$1\frac{3}{20}$	$2\frac{1}{5}$	$= 3\frac{39}{100}$
$3\frac{2}{5}$	$1\frac{1}{50}$	$1\frac{3}{100}$	$= 5\frac{9}{20}$
$\parallel$	$\parallel$	$\parallel$	
$4\frac{69}{100}$	$4\frac{27}{100}$	$3\frac{12}{25}$	

7 A painter uses the following mixtures.

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

$\frac{1}{60}$ l

8 Eva and Amir are working out this calculation.

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

This is going to be very difficult, because I can't find a common denominator.

I have found an easier way.

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