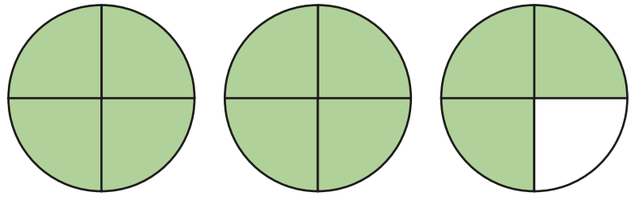
Mixed numbers to improper fractions

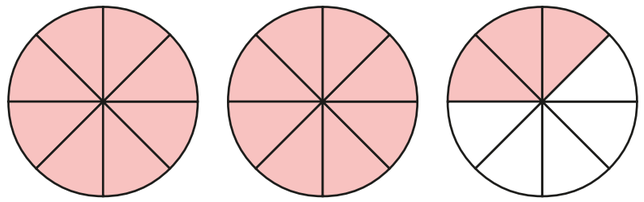
1 Convert the mixed numbers to improper fractions.

a)



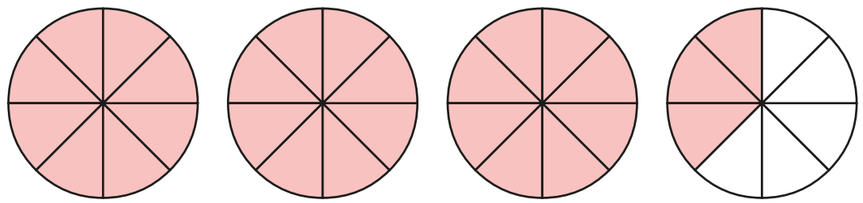
$2\frac{3}{4} = \frac{\square}{4}$

b)



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

c)

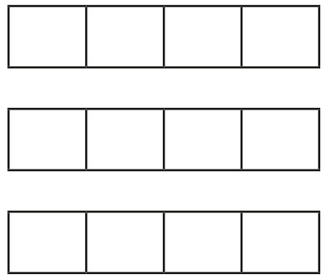


$3\frac{3}{8} = \frac{\square}{8}$

2 Convert the mixed numbers to improper fractions.

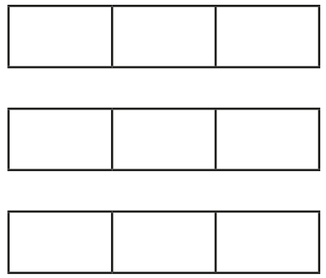
Colour the bar models to help you.

a)



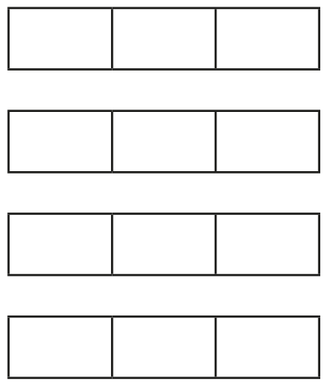
$2\frac{1}{4} = \square$

b)



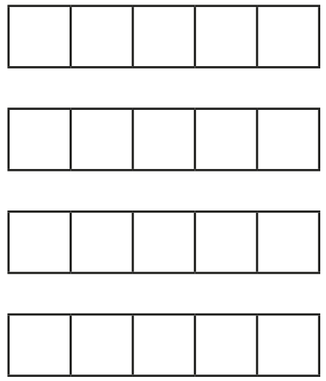
$2\frac{1}{3} = \square$

c)



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

d)



$3\frac{2}{5} = \square$

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3 Convert the mixed numbers to improper fractions.

Write the next conversion in each part.

a)

$2\frac{1}{7} = \square$

$2\frac{2}{7} = \square$

$2\frac{3}{7} = \square$

$\square = \square$

b)

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

$4\frac{1}{5} = \square$

$5\frac{1}{5} = \square$

$\square = \square$

c)

$5\frac{1}{2} = \square$

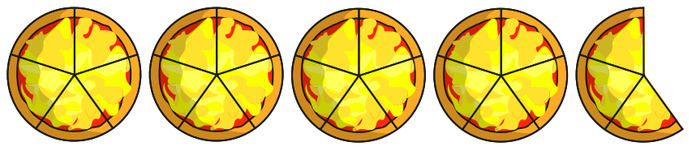
$5\frac{1}{4} = \square$

$5\frac{1}{8} = \square$

$\square = \square$

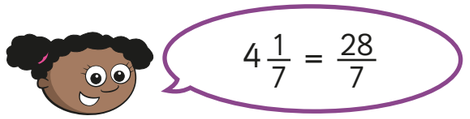
Talk to a partner about any patterns you spot.

4 Here are 4 whole pizzas and $\frac{3}{5}$ of a pizza.



How many children can have $\frac{1}{5}$ of a pizza? $\square$

5 Whitney is converting mixed numbers to improper fractions.



Do you agree with Whitney? _____

Explain your answer.

_____

_____

6

$\bigcirc \frac{3}{5} = \frac{\triangle}{5}$

The table shows some possible values of the circle.

Use this to find the corresponding value of the triangle.

○	△
1	
2	
4	
8	
16	
	88
	803

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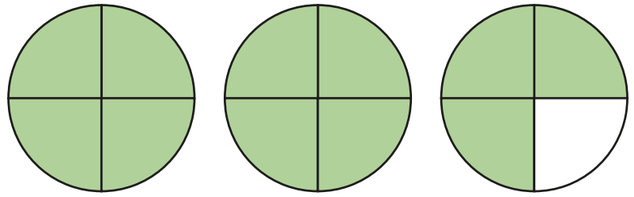
Mixed numbers to improper fractions

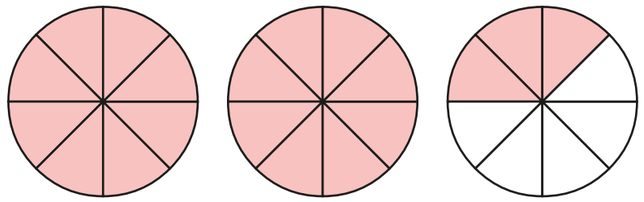
1 Convert the mixed numbers to improper fractions.

a)



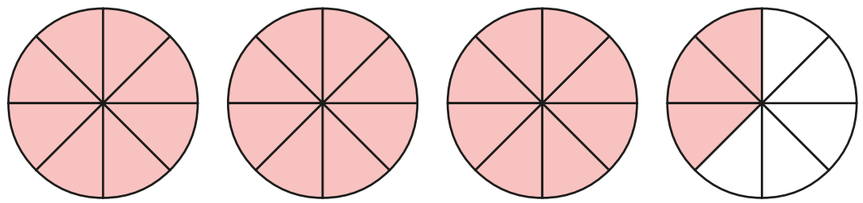
$2\frac{3}{4} = \frac{11}{4}$

b)



$2\frac{3}{8} = \frac{19}{8}$

c)

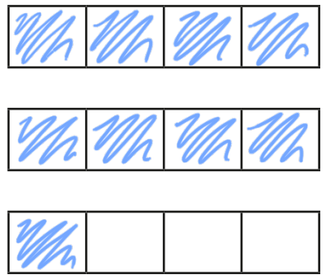


$3\frac{3}{8} = \frac{27}{8}$

2 Convert the mixed numbers to improper fractions.

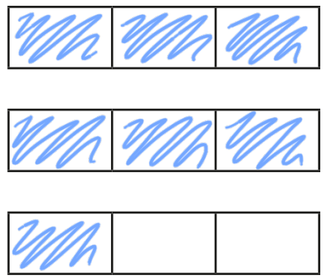
Colour the bar models to help you.

a)



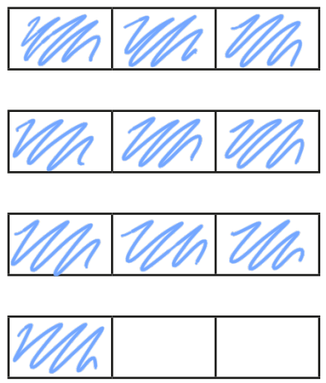
$2\frac{1}{4} = \frac{9}{4}$

b)



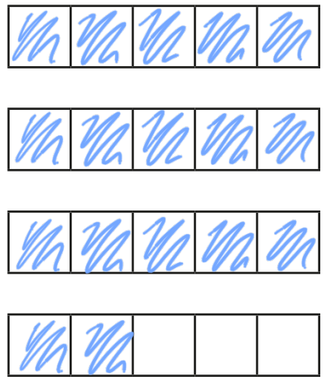
$2\frac{1}{3} = \frac{7}{3}$

c)



$3\frac{1}{3} = \frac{10}{3}$

d)



$3\frac{2}{5} = \frac{17}{5}$

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3 Convert the mixed numbers to improper fractions.

Write the next conversion in each part.

a)

$2\frac{1}{7} = \frac{15}{7}$

$2\frac{2}{7} = \frac{16}{7}$

$2\frac{3}{7} = \frac{17}{7}$

$2\frac{4}{7} = \frac{18}{7}$

b)

$3\frac{1}{5} = \frac{16}{5}$

$4\frac{1}{5} = \frac{21}{5}$

$5\frac{1}{5} = \frac{26}{5}$

$6\frac{1}{5} = \frac{31}{5}$

c)

$5\frac{1}{2} = \frac{11}{2}$

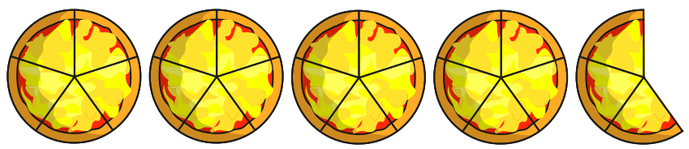
$5\frac{1}{4} = \frac{21}{4}$

$5\frac{1}{8} = \frac{41}{8}$

$5\frac{1}{16} = \frac{81}{16}$

Talk to a partner about any patterns you spot.

4 Here are 4 whole pizzas and $\frac{3}{5}$ of a pizza.



How many children can have $\frac{1}{5}$ of a pizza?

23

5 Whitney is converting mixed numbers to improper fractions.

$4\frac{1}{7} = \frac{28}{7}$

Do you agree with Whitney? No

Explain your answer.

She has converted 4 wholes to $\frac{28}{7}$ but forgotten to add the extra seventh.

6

$\bigcirc\frac{3}{5} = \triangle\frac{}{5}$

The table shows some possible values of the circle.

Use this to find the corresponding value of the triangle.

○	△
1	8
2	13
4	23
8	43
16	83
17	88
160	803

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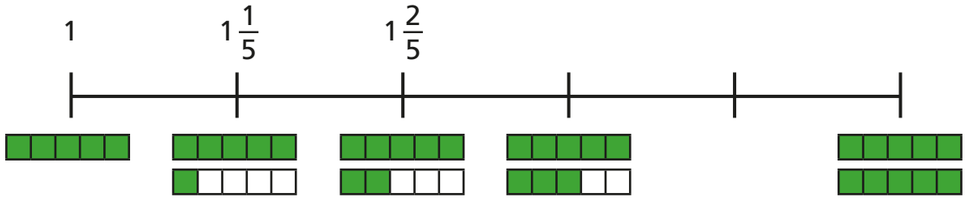
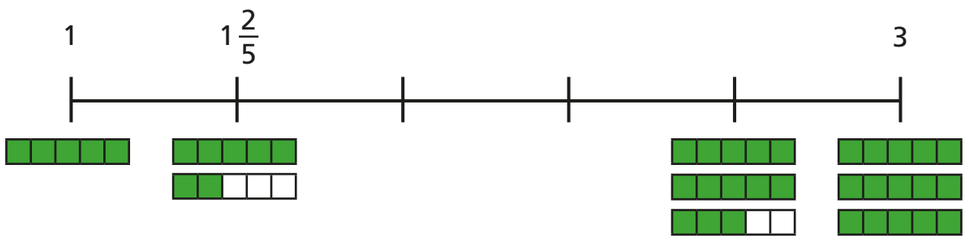
Number sequences

1 Complete the number lines.

a)

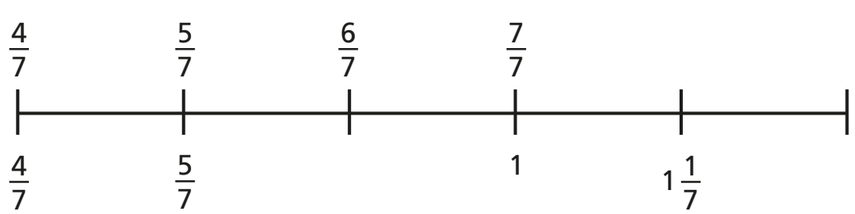


b)

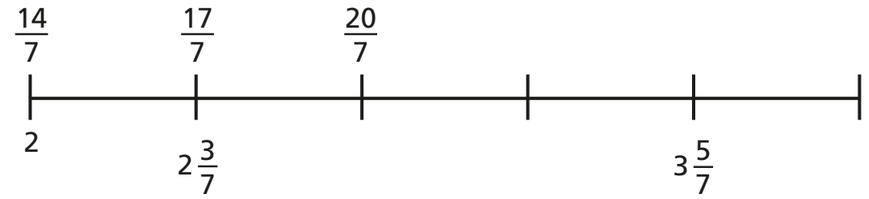


2 Complete the number lines.

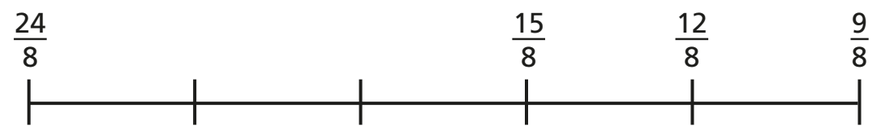
a)



b)



c)



3 Continue the sequences.

a) $2\frac{7}{8}$, $3\frac{1}{8}$, $3\frac{3}{8}$, ☐, ☐, ☐

b) $5\frac{6}{7}$, $5\frac{3}{7}$, 5, ☐, ☐, ☐

c) $5\frac{6}{11}$, $5\frac{3}{11}$, 5, ☐, ☐, ☐

What is the same and what is different about the sequences in parts b) and c)?

Talk about it with a partner.

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4 Match each sequence to its rule.

$2\frac{2}{3}, \ 3\frac{1}{3}, \ 4, \ 4\frac{2}{3}$	add three quarters
$2\frac{1}{2}, \ 3\frac{1}{4}, \ 4, \ 4\frac{3}{4}$	subtract two thirds
$4\frac{1}{3}, \ 3\frac{2}{3}, \ 3, \ 2\frac{1}{3}$	add two thirds
$4\frac{1}{4}, \ 3\frac{3}{4}, \ 3\frac{1}{4}, \ 2\frac{3}{4}$	subtract one half

5 Teddy and Rosie are finding the missing numbers in the sequence.

3, ☐, ☐, ☐, ☐, ☐, ☐, ☐, 4

a)

I think the missing fractions are sevenths because there are seven blank number cards.

Do you agree with Teddy? _____

Explain your answer.

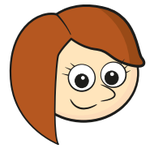
_____

_____

b) Complete the sequence.

3, ☐, ☐, ☐, ☐, ☐, ☐, ☐, 4

c)



I think one of the missing fractions is equivalent to $3\frac{1}{2}$

Is Rosie correct? _____

Explain how you know.

_____

_____

d) Which other fractions in the sequence can you find equivalent fractions for?

6

I am thinking of a number sequence. The 1st and 4th terms are consecutive integers.

Write the rule for Amir's sequence.

_____

_____

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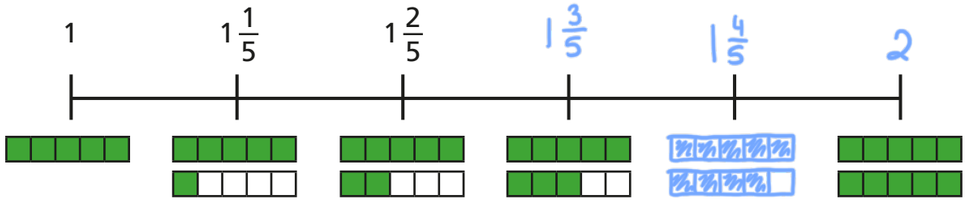
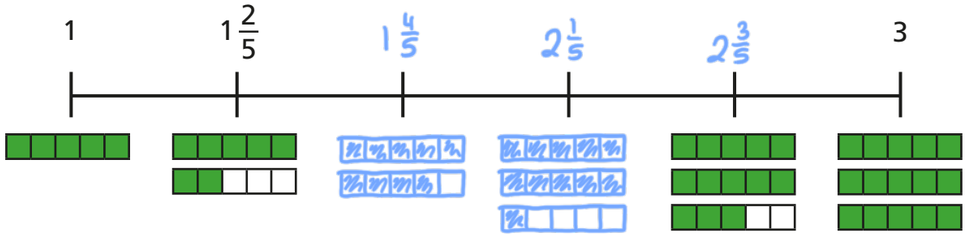
Number sequences

1 Complete the number lines.

a)

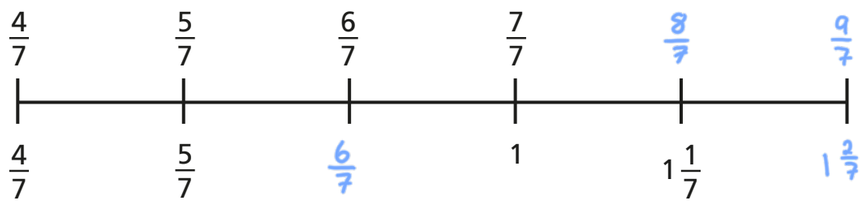


b)

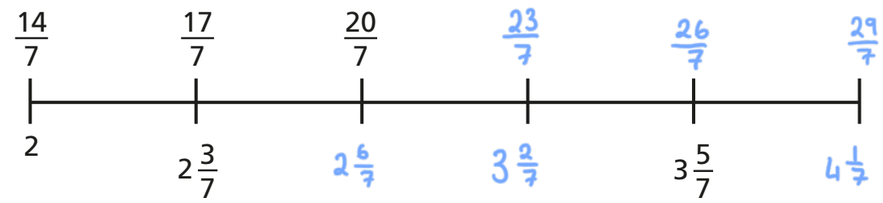


2 Complete the number lines.

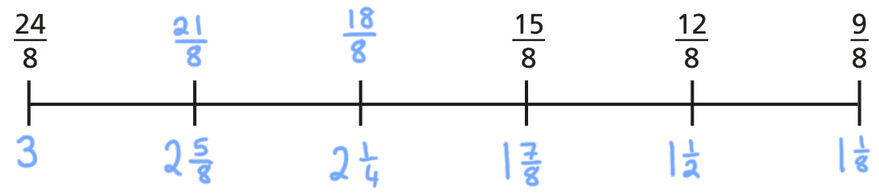
a)



b)



c)



3 Continue the sequences.

a) $2\frac{7}{8}$, $3\frac{1}{8}$, $3\frac{3}{8}$, $3\frac{5}{8}$, $3\frac{7}{8}$, $4\frac{1}{8}$

b) $5\frac{6}{7}$, $5\frac{3}{7}$, 5, $4\frac{4}{7}$, $4\frac{1}{7}$, $3\frac{5}{7}$

c) $5\frac{6}{11}$, $5\frac{3}{11}$, 5, $4\frac{8}{11}$, $4\frac{5}{11}$, $4\frac{2}{11}$

What is the same and what is different about the sequences in parts b) and c)?

Talk about it with a partner.

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4 Match each sequence to its rule.

$2\frac{2}{3}$, $3\frac{1}{3}$, 4, $4\frac{2}{3}$	add three quarters
$2\frac{1}{2}$, $3\frac{1}{4}$, 4, $4\frac{3}{4}$	subtract two thirds
$4\frac{1}{3}$, $3\frac{2}{3}$, 3, $2\frac{1}{3}$	add two thirds
$4\frac{1}{4}$, $3\frac{3}{4}$, $3\frac{1}{4}$, $2\frac{3}{4}$	subtract one half

5 Teddy and Rosie are finding the missing numbers in the sequence.

3, ☐, ☐, ☐, ☐, ☐, ☐, ☐, 4

a)

I think the missing fractions are sevenths because there are seven blank number cards.

Do you agree with Teddy? No

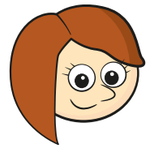
Explain your answer.

If they were sevenths there would only be 6 blank cards because $3\frac{7}{7} = 4$

b) Complete the sequence.

3, $3\frac{1}{8}$, $3\frac{2}{8}$, $3\frac{3}{8}$, $3\frac{4}{8}$, $3\frac{5}{8}$, $3\frac{6}{8}$, $3\frac{7}{8}$, 4

c)



I think one of the missing fractions is equivalent to $3\frac{1}{2}$

Is Rosie correct? Yes

Explain how you know.

$\frac{4}{8}$ is equivalent to $\frac{1}{2}$ so $3\frac{4}{8}$ is equivalent to $3\frac{1}{2}$.

d) Which other fractions in the sequence can you find equivalent fractions for?

6

I am thinking of a number sequence. The 1st and 4th terms are consecutive integers.

Write the rule for Amir's sequence.

Add one third. (Accept subtract one third)

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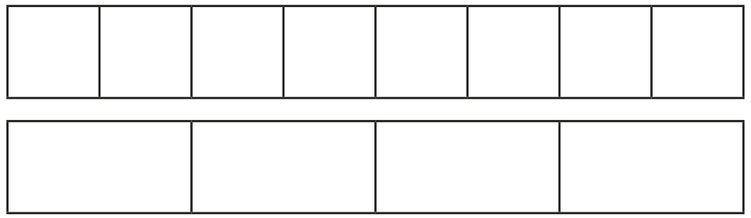
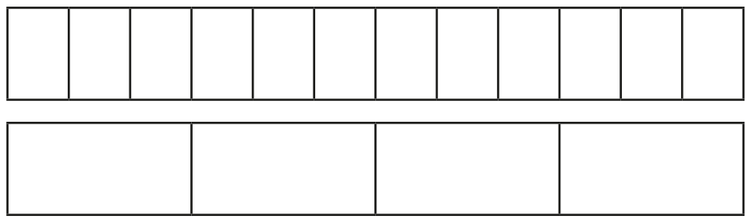
Compare and order fractions less than 1

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

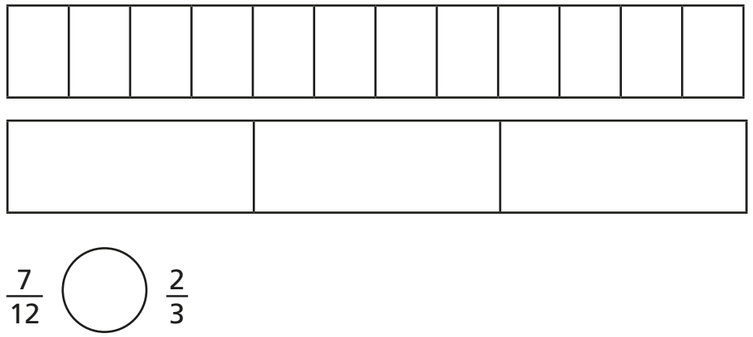
Use the bar models to help you.



$\frac{7}{8}$ ◯ $\frac{3}{4}$



$\frac{9}{12}$ ◯ $\frac{3}{4}$



$\frac{7}{12}$ ◯ $\frac{2}{3}$

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

a) $\frac{1}{5}$ ◯ $\frac{4}{15}$

b) $\frac{2}{5}$ ◯ $\frac{4}{15}$

c) $\frac{2}{5}$ ◯ $\frac{6}{15}$

d) $\frac{2}{3}$ ◯ $\frac{6}{15}$

e) $\frac{2}{3}$ ◯ $\frac{6}{12}$

f) $\frac{2}{3}$ ◯ $\frac{6}{9}$

g) $\frac{2}{9}$ ◯ $\frac{1}{3}$

h) $\frac{4}{9}$ ◯ $\frac{1}{3}$

i) $\frac{4}{12}$ ◯ $\frac{1}{3}$

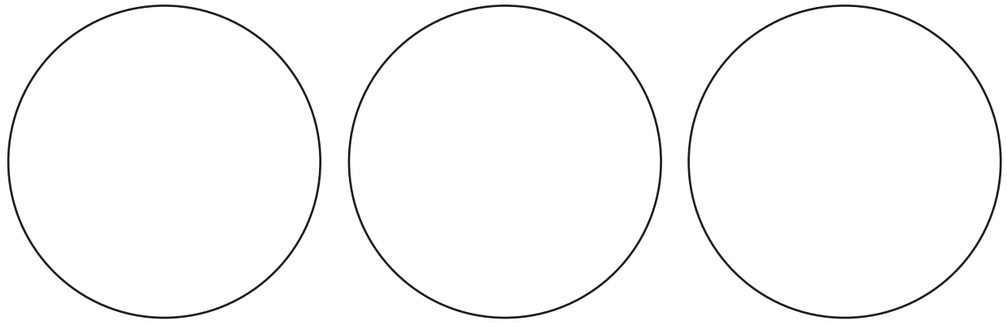
j) $\frac{8}{12}$ ◯ $\frac{2}{3}$

k) $\frac{8}{12}$ ◯ $\frac{3}{3}$

l) $\frac{8}{12}$ ◯ $\frac{3}{4}$

3 Sort the fractions into the circles.

greater than $\frac{1}{3}$ | equal to $\frac{1}{3}$ | less than $\frac{1}{3}$



$\frac{2}{3}$	$\frac{1}{6}$	$\frac{1}{2}$	$\frac{2}{6}$	$\frac{2}{9}$	$\frac{5}{12}$	$\frac{4}{12}$	$\frac{4}{15}$	$\frac{5}{15}$

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4 What could the missing numerators and denominators be?

Write a number in each box to make the statements correct.

a) $\frac{\square}{5} < \frac{5}{15}$

b) $\frac{\square}{6} < \frac{5}{12}$

c) $\frac{\square}{12} < \frac{5}{6}$

d) $\frac{\square}{3} < \frac{5}{6}$

e) $\frac{3}{5} < \frac{5}{\square}$

f) $\frac{5}{6} < \frac{5}{\square}$

g) $\frac{6}{9} < \frac{5}{\square}$

h) $\frac{10}{12} < \frac{5}{\square}$

i) $\frac{23}{24} < \frac{5}{\square}$

Compare answers with a partner.

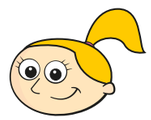
5 Tommy and Eva are comparing fractions.

$\frac{2}{3}$ $\frac{8}{12}$ $\frac{4}{9}$

I found a common denominator of 36 to compare the fractions.

Tommy

I found a common numerator of 4 to compare the fractions.



Eva

Whose method is more efficient? _____

Talk about your answer with a partner.

6 Write the fractions in ascending order.

a) $\frac{2}{5}, \frac{2}{7}, \frac{2}{3}, \frac{2}{4}, \frac{2}{10}$

b) $\frac{2}{3}, \frac{5}{9}, \frac{1}{9}, \frac{5}{6}, \frac{2}{9}$

c) $\frac{3}{5}, \frac{7}{10}, \frac{1}{2}, \frac{3}{10}, \frac{1}{5}$

d) $\frac{3}{8}, \frac{6}{17}, \frac{12}{30}, \frac{2}{7}, \frac{1}{3}$

7 What could the missing numerator be?

$\frac{3}{5} < \frac{\square}{15} < \frac{9}{10}$

Write all four possibilities.

$\frac{\square}{15}$ $\frac{\square}{15}$ $\frac{\square}{15}$ $\frac{\square}{15}$

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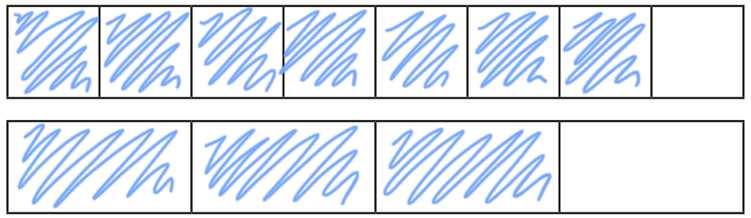
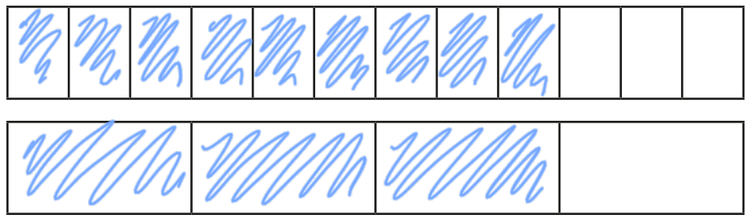
Compare and order fractions less than 1

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

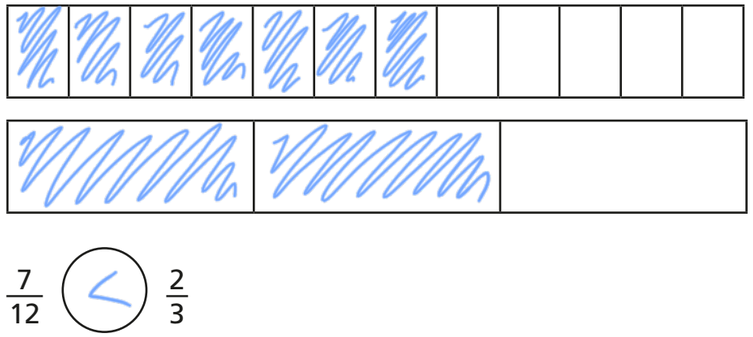
Use the bar models to help you.



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



$\frac{9}{12}$ = $\frac{3}{4}$



$\frac{7}{12}$ < $\frac{2}{3}$

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

a) $\frac{1}{5}$ < $\frac{4}{15}$

b) $\frac{2}{5}$ > $\frac{4}{15}$

c) $\frac{2}{5}$ = $\frac{6}{15}$

d) $\frac{2}{3}$ > $\frac{6}{15}$

e) $\frac{2}{3}$ > $\frac{6}{12}$

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

g) $\frac{2}{9}$ < $\frac{1}{3}$

h) $\frac{4}{9}$ > $\frac{1}{3}$

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

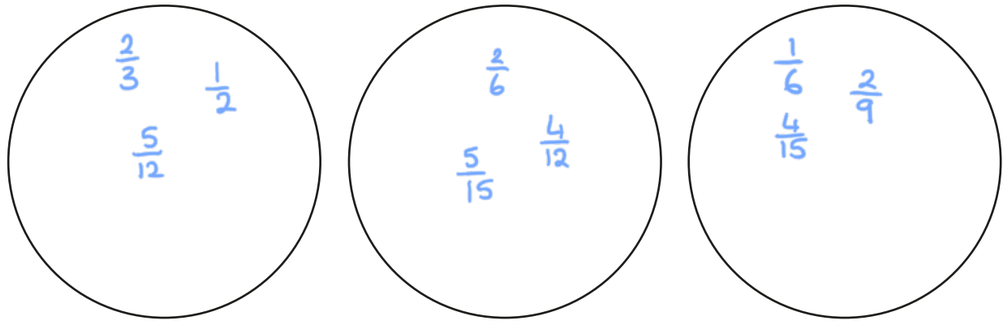
j) $\frac{8}{12}$ = $\frac{2}{3}$

k) $\frac{8}{12}$ < $\frac{3}{3}$

l) $\frac{8}{12}$ < $\frac{3}{4}$

3 Sort the fractions into the circles.

greater than $\frac{1}{3}$ | equal to $\frac{1}{3}$ | less than $\frac{1}{3}$



$\frac{2}{3}$	$\frac{1}{6}$	$\frac{1}{2}$	$\frac{2}{6}$	$\frac{2}{9}$	$\frac{5}{12}$	$\frac{4}{12}$	$\frac{4}{15}$	$\frac{5}{15}$

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4 What could the missing numerators and denominators be?

Write a number in each box to make the statements correct.

e.g. $\frac{1}{5} < \frac{5}{15}$

a) $\frac{\boxed{1}}{5} < \frac{5}{15}$

b) $\frac{\boxed{2}}{6} < \frac{5}{12}$

c) $\frac{\boxed{5}}{12} < \frac{5}{6}$

d) $\frac{\boxed{1}}{3} < \frac{5}{6}$

e) $\frac{3}{5} < \frac{5}{\boxed{5}}$

f) $\frac{5}{6} < \frac{5}{\boxed{5}}$

g) $\frac{6}{9} < \frac{5}{\boxed{6}}$

h) $\frac{10}{12} < \frac{5}{\boxed{4}}$

i) $\frac{23}{24} < \frac{5}{\boxed{5}}$

Compare answers with a partner.

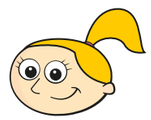
5 Tommy and Eva are comparing fractions.

$\frac{2}{3}$ $\frac{8}{12}$ $\frac{4}{9}$

I found a common denominator of 36 to compare the fractions.

Tommy

I found a common numerator of 4 to compare the fractions.



Eva

Whose method is more efficient? Various

Talk about your answer with a partner.

6 Write the fractions in ascending order.

a) $\frac{2}{5}, \frac{2}{7}, \frac{2}{3}, \frac{2}{4}, \frac{2}{10}$

$\frac{2}{10}$ $\frac{2}{7}$ $\frac{2}{5}$ $\frac{2}{4}$ $\frac{2}{3}$

b) $\frac{2}{3}, \frac{5}{9}, \frac{1}{9}, \frac{5}{6}, \frac{2}{9}$

$\frac{1}{9}$ $\frac{2}{9}$ $\frac{5}{9}$ $\frac{2}{3}$ $\frac{5}{6}$

c) $\frac{3}{5}, \frac{7}{10}, \frac{1}{2}, \frac{3}{10}, \frac{1}{5}$

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

d) $\frac{3}{8}, \frac{6}{17}, \frac{12}{30}, \frac{2}{7}, \frac{1}{3}$

$\frac{2}{7}$ $\frac{1}{3}$ $\frac{6}{17}$ $\frac{3}{8}$ $\frac{12}{30}$

7 What could the missing numerator be?

$\frac{3}{5} < \frac{\square}{15} < \frac{9}{10}$

Write all four possibilities.

$\frac{10}{15}$ $\frac{11}{15}$ $\frac{12}{15}$ $\frac{13}{15}$

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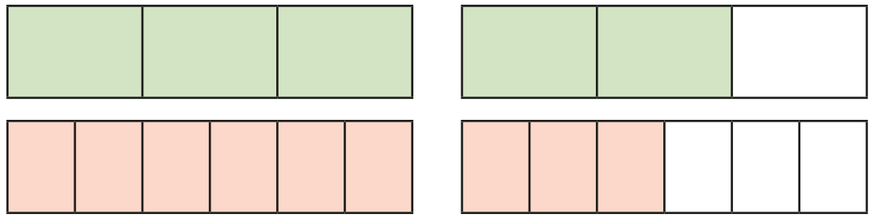
Compare and order fractions greater than 1

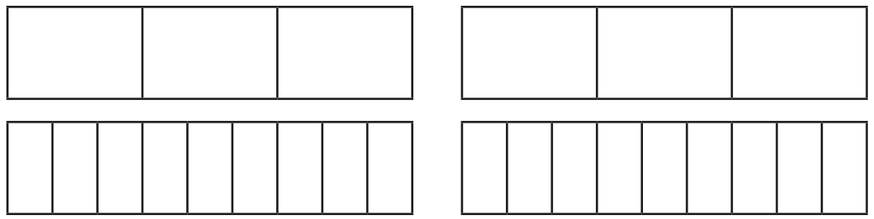
1 Write <, > or = to compare the fractions.

Use the bar models to help you.

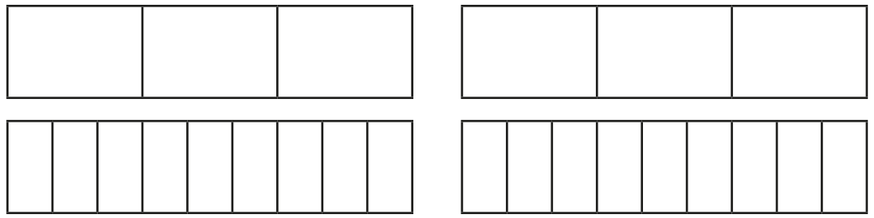
a) $\frac{5}{3}$ ◯ $\frac{9}{6}$



b) $\frac{5}{3}$ ◯ $\frac{15}{9}$



c) $\frac{4}{3}$ ◯ $\frac{13}{9}$



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

a) $\frac{7}{4}$ ◯ $\frac{12}{8}$

b) $\frac{7}{4}$ ◯ $\frac{22}{12}$

c) $\frac{22}{12}$ ◯ $\frac{10}{6}$

d) $\frac{10}{6}$ ◯ $\frac{5}{3}$

e) $\frac{10}{6}$ ◯ $\frac{5}{2}$

f) $\frac{5}{2}$ ◯ $\frac{18}{8}$

g) $\frac{18}{8}$ ◯ $\frac{32}{16}$

h) $\frac{18}{8}$ ◯ $\frac{9}{4}$

i) $\frac{9}{4}$ ◯ $\frac{18}{2}$

3 Filip has $3\frac{3}{16}$ bottles of juice.

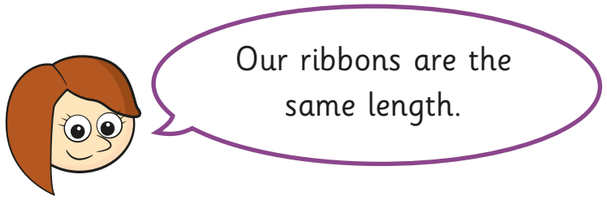
Scott has $3\frac{1}{4}$ bottles of juice.

Who has more juice?

_____ has more juice.

4 Rosie's ribbon is $\frac{7}{4}$ metres long.

Teddy's ribbon is $\frac{7}{8}$ metres long.



Explain why Rosie is wrong.

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5 Write the fractions in descending order.

a) $\frac{8}{3}$, $\frac{4}{5}$, $\frac{8}{15}$, $\frac{8}{2}$, $\frac{16}{8}$

b) $\frac{7}{3}$, $\frac{12}{9}$, $\frac{15}{9}$, $\frac{15}{6}$, $\frac{7}{9}$

c) $\frac{14}{5}$, $\frac{17}{10}$, $\frac{27}{10}$, $\frac{3}{1}$, $\frac{42}{20}$

6 Find three possible ways to complete each statement.

a) $\frac{1}{4} < \frac{\square}{4} < \frac{9}{8}$

$\frac{1}{4} < \frac{\square}{4} < \frac{9}{8}$

$\frac{1}{4} < \frac{\square}{4} < \frac{9}{8}$

b) $\frac{1}{4} < \frac{\square}{15} < \frac{7}{15}$

$\frac{1}{4} < \frac{\square}{15} < \frac{7}{15}$

$\frac{1}{4} < \frac{\square}{15} < \frac{7}{15}$

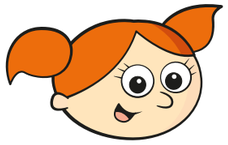
c) $\frac{4}{5} < \frac{8}{\square} < \frac{8}{4}$

$\frac{4}{5} < \frac{8}{\square} < \frac{8}{4}$

$\frac{4}{5} < \frac{8}{\square} < \frac{8}{4}$

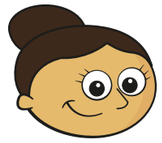
7 Alex and Dora each have two identical cakes.

Alex cuts each of her cakes into 6 equal pieces and gives 10 of her friends a piece each.

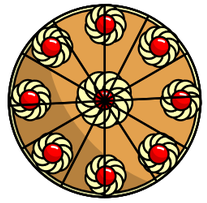


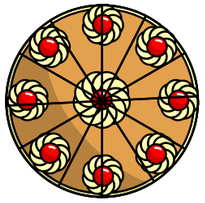
Alex

Dora cuts each of her cakes into 12 equal pieces and gives 18 of her friends a piece each.



Dora





Who has more cake left?

_____ has more cake left.

8 *The greater the numerator, the greater the fraction.*

Give at least three examples to show that the statement is not correct.

_____

_____

_____

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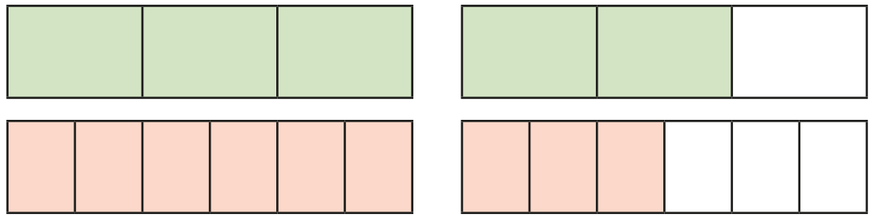
Compare and order fractions greater than 1

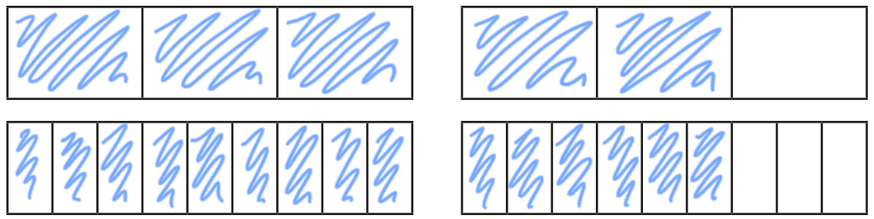
1 Write <, > or = to compare the fractions.

Use the bar models to help you.

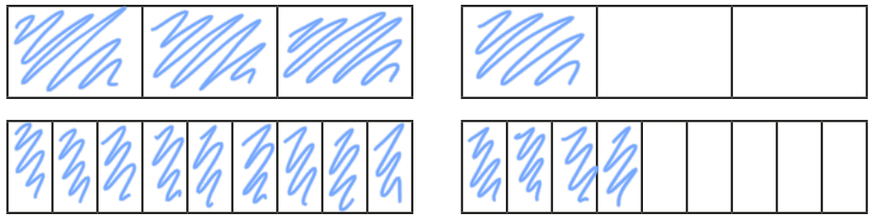
a) $\frac{5}{3}$ > $\frac{9}{6}$



b) $\frac{5}{3}$ = $\frac{15}{9}$



c) $\frac{4}{3}$ < $\frac{13}{9}$



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

a) $\frac{7}{4}$ > $\frac{12}{8}$

b) $\frac{7}{4}$ < $\frac{22}{12}$

c) $\frac{22}{12}$ > $\frac{10}{6}$

d) $\frac{10}{6}$ = $\frac{5}{3}$

e) $\frac{10}{6}$ < $\frac{5}{2}$

f) $\frac{5}{2}$ > $\frac{18}{8}$

g) $\frac{18}{8}$ > $\frac{32}{16}$

h) $\frac{18}{8}$ = $\frac{9}{4}$

i) $\frac{9}{4}$ < $\frac{18}{2}$

3 Filip has $3\frac{3}{16}$ bottles of juice.

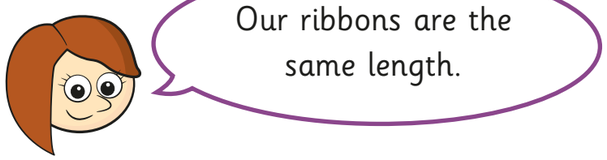
Scott has $3\frac{1}{4}$ bottles of juice.

Who has more juice?

Scott has more juice.

4 Rosie's ribbon is $\frac{7}{4}$ metres long.

Teddy's ribbon is $\frac{7}{8}$ metres long.



Explain why Rosie is wrong.

The number of parts is the same but the size of their parts is different. Rosie's ribbon is longer.

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5 Write the fractions in descending order.

a) $\frac{8}{3}, \frac{4}{5}, \frac{8}{15}, \frac{8}{2}, \frac{16}{8}$

$\frac{8}{2}$ $\frac{8}{3}$ $\frac{16}{8}$ $\frac{4}{5}$ $\frac{8}{15}$

b) $\frac{7}{3}, \frac{12}{9}, \frac{15}{9}, \frac{15}{6}, \frac{7}{9}$

$\frac{15}{6}$ $\frac{7}{3}$ $\frac{15}{9}$ $\frac{12}{9}$ $\frac{7}{9}$

c) $\frac{14}{5}, \frac{17}{10}, \frac{27}{10}, \frac{3}{1}, \frac{42}{20}$

$\frac{3}{1}$ $\frac{14}{5}$ $\frac{27}{10}$ $\frac{42}{20}$ $\frac{17}{10}$

6 Find three possible ways to complete each statement.

a) $\frac{1}{4} < \frac{\boxed{2}}{4} < \frac{9}{8}$

$\frac{1}{4} < \frac{\boxed{3}}{4} < \frac{9}{8}$

$\frac{1}{4} < \frac{\boxed{4}}{4} < \frac{9}{8}$

b) $\frac{1}{4} < \frac{\boxed{4}}{15} < \frac{7}{15}$

$\frac{1}{4} < \frac{\boxed{5}}{15} < \frac{7}{15}$

$\frac{1}{4} < \frac{\boxed{6}}{15} < \frac{7}{15}$

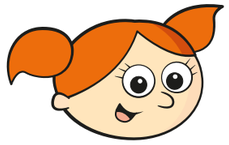
c) $\frac{4}{5} < \frac{8}{\boxed{8}} < \frac{8}{4}$

$\frac{4}{5} < \frac{8}{\boxed{7}} < \frac{8}{4}$

$\frac{4}{5} < \frac{8}{\boxed{6}} < \frac{8}{4}$

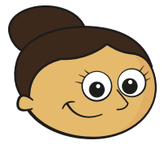
7 Alex and Dora each have two identical cakes.

Alex cuts each of her cakes into 6 equal pieces and gives 10 of her friends a piece each.

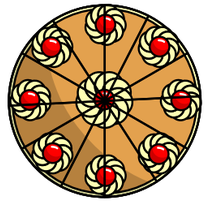


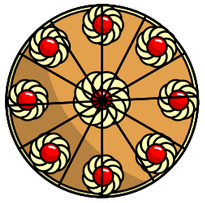
Alex

Dora cuts each of her cakes into 12 equal pieces and gives 18 of her friends a piece each.



Dora





Who has more cake left?

Dora has more cake left.

8 The greater the numerator, the greater the fraction.

Give at least three examples to show that the statement is not correct.

Various answers e.g. $\frac{3}{17} < \frac{1}{2}$

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Add and subtract fractions

1 Complete the calculations.

Use the bar models to help you.

a)

$\frac{4}{5} + \frac{3}{5} = \square = \square$

b)

$\frac{6}{5} + \frac{3}{5} = \square = \square$

c)

$\frac{8}{5} - \frac{6}{5} = \square$

d)

$\frac{9}{5} - \frac{3}{5} = \square = \square$

2 Complete the calculations.

a) $\frac{4}{7} + \frac{2}{7} = \square$

b) $\frac{4}{7} + \frac{3}{7} = \square = \square$

c) $\frac{4}{7} + \frac{4}{7} = \square = \square$

d) $\frac{8}{7} - \frac{3}{7} = \square$

e) $\frac{7}{9} + \frac{8}{9} = \square = \square$

f) $\frac{17}{9} - \frac{8}{9} = \square = \square$

g) $\frac{16}{9} - \frac{8}{9} = \square$

h) $\frac{7}{9} + \frac{2}{9} + \frac{8}{9} = \square = \square$

i) $\frac{7}{15} + \frac{2}{15} + \frac{8}{15} = \square = \square$

j) $\frac{7}{15} - \frac{2}{15} + \frac{8}{15} = \square$

3 $\frac{\square}{8} + \frac{\square}{8} = \frac{13}{8}$

What could the missing numerators be?

Give six different possibilities.

$\frac{\square}{8} + \frac{\square}{8} = \frac{13}{8}$

$\frac{\square}{8} + \frac{\square}{8} = \frac{13}{8}$

$\frac{\square}{8} + \frac{\square}{8} = \frac{13}{8}$

$\frac{\square}{8} + \frac{\square}{8} = \frac{13}{8}$

$\frac{\square}{8} + \frac{\square}{8} = \frac{13}{8}$

$\frac{\square}{8} + \frac{\square}{8} = \frac{13}{8}$

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4 Dora has $2\frac{3}{8}$ litres of juice.

She pours out $\frac{9}{8}$ litres of juice.

How many litres of juice does she have left?

Dora has ☐ litres left.

5 Fill in the missing numerators.

a) $\frac{3}{8} + \frac{\square}{8} = \frac{13}{8}$

b) $\frac{13}{8} - \frac{\square}{8} = \frac{7}{8}$

c) $\frac{13}{8} - \frac{\square}{8} = 1$

d) $\frac{11}{9} + \frac{\square}{9} = \frac{22}{9} = 2\frac{\square}{9}$

e) $\frac{11}{9} + \frac{\square}{9} = \frac{\square}{9} = 2\frac{2}{9}$

f) $\frac{22}{9} - \frac{\square}{9} = \frac{\square}{9} = 2\frac{2}{9}$

g) $\frac{4}{7} + \frac{\square}{7} + \frac{4}{7} = 2$

h) $\frac{5}{7} + \frac{\square}{7} + \frac{5}{7} = 2$

i) $\frac{6}{7} + \frac{\square}{7} + \frac{6}{7} = 2$

j) $\frac{14}{7} + \frac{\square}{7} + \frac{4}{7} = 3$

k) $\frac{15}{7} + \frac{\square}{7} + \frac{5}{7} = 3$

i) $\frac{16}{7} + \frac{\square}{7} + \frac{6}{7} = 4$

Compare answers with a partner. What do you notice?

6 Here are some fraction cards.

$\frac{9}{8}$	$\frac{13}{8}$	$\frac{1}{8}$	$\frac{7}{8}$	$\frac{3}{8}$	$1\frac{7}{8}$

Use the cards to write pairs of fractions with a total of 2

☐ + ☐ = 2

☐ + ☐ = 2

☐ + ☐ = 2

7 Annie and Dexter both have a skipping rope.

Annie's rope is $\frac{3}{4}$ m shorter than Dexter's rope.

The ropes are $\frac{13}{4}$ m altogether.

How long is each skipping rope?

Annie's rope is ☐ m long. Dexter's rope is ☐ m long.

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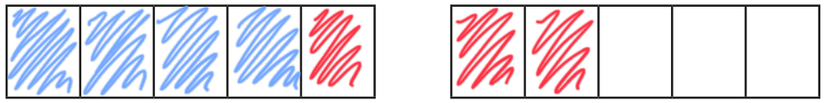
Add and subtract fractions

1 Complete the calculations.

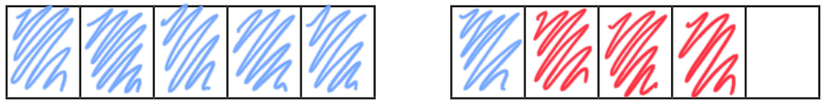
Use the bar models to help you.

a)



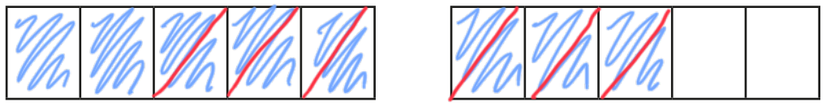
$\frac{4}{5} + \frac{3}{5} = \boxed{\frac{7}{5}} = \boxed{1\frac{2}{5}}$

b)



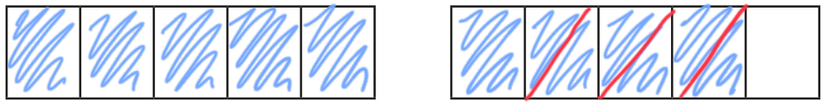
$\frac{6}{5} + \frac{3}{5} = \boxed{\frac{9}{5}} = \boxed{1\frac{4}{5}}$

c)



$\frac{8}{5} - \frac{6}{5} = \boxed{\frac{2}{5}}$

d)



$\frac{9}{5} - \frac{3}{5} = \boxed{\frac{6}{5}} = \boxed{1\frac{1}{5}}$

2 Complete the calculations.

a) $\frac{4}{7} + \frac{2}{7} = \boxed{\frac{6}{7}}$

b) $\frac{4}{7} + \frac{3}{7} = \boxed{\frac{7}{7}} = \boxed{1}$

c) $\frac{4}{7} + \frac{4}{7} = \boxed{\frac{8}{7}} = \boxed{1\frac{1}{7}}$

d) $\frac{8}{7} - \frac{3}{7} = \boxed{\frac{5}{7}}$

e) $\frac{7}{9} + \frac{8}{9} = \boxed{\frac{15}{9}} = \boxed{1\frac{2}{3}}$

f) $\frac{17}{9} - \frac{8}{9} = \boxed{\frac{9}{9}} = \boxed{1}$

g) $\frac{16}{9} - \frac{8}{9} = \boxed{\frac{8}{9}}$

h) $\frac{7}{9} + \frac{2}{9} + \frac{8}{9} = \boxed{\frac{17}{9}} = \boxed{1\frac{8}{9}}$

i) $\frac{7}{15} + \frac{2}{15} + \frac{8}{15} = \boxed{\frac{17}{15}} = \boxed{1\frac{2}{15}}$

j) $\frac{7}{15} - \frac{2}{15} + \frac{8}{15} = \boxed{\frac{13}{15}}$

3

$\frac{\square}{8} + \frac{\square}{8} = \frac{13}{8}$

What could the missing numerators be?

Give six different possibilities.

e.g.

$\frac{\boxed{1}}{8} + \frac{\boxed{12}}{8} = \frac{13}{8}$

$\frac{\boxed{2}}{8} + \frac{\boxed{11}}{8} = \frac{13}{8}$

$\frac{\boxed{3}}{8} + \frac{\boxed{10}}{8} = \frac{13}{8}$

$\frac{\boxed{4}}{8} + \frac{\boxed{9}}{8} = \frac{13}{8}$

$\frac{\boxed{5}}{8} + \frac{\boxed{8}}{8} = \frac{13}{8}$

$\frac{\boxed{7}}{8} + \frac{\boxed{6}}{8} = \frac{13}{8}$

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4 Dora has $2\frac{3}{8}$ litres of juice.

She pours out $\frac{9}{8}$ litres of juice.

How many litres of juice does she have left?

Dora has $\boxed{1\frac{1}{4}}$ litres left.

5 Fill in the missing numerators.

a) $\frac{3}{8} + \frac{\boxed{10}}{8} = \frac{13}{8}$

b) $\frac{13}{8} - \frac{\boxed{6}}{8} = \frac{7}{8}$

c) $\frac{13}{8} - \frac{\boxed{5}}{8} = 1$

d) $\frac{11}{9} + \frac{\boxed{11}}{9} = \frac{22}{9} = 2\frac{\boxed{4}}{9}$

e) $\frac{11}{9} + \frac{\boxed{9}}{9} = \frac{\boxed{20}}{9} = 2\frac{2}{9}$

f) $\frac{22}{9} - \frac{\boxed{2}}{9} = \frac{\boxed{20}}{9} = 2\frac{2}{9}$

g) $\frac{4}{7} + \frac{\boxed{6}}{7} + \frac{4}{7} = 2$

h) $\frac{5}{7} + \frac{\boxed{4}}{7} + \frac{5}{7} = 2$

i) $\frac{6}{7} + \frac{\boxed{2}}{7} + \frac{6}{7} = 2$

j) $\frac{14}{7} + \frac{\boxed{3}}{7} + \frac{4}{7} = 3$

k) $\frac{15}{7} + \frac{\boxed{1}}{7} + \frac{5}{7} = 3$

i) $\frac{16}{7} + \frac{\boxed{6}}{7} + \frac{6}{7} = 4$

Compare answers with a partner. What do you notice?

6 Here are some fraction cards.

$\frac{9}{8}$	$\frac{13}{8}$	$\frac{1}{8}$	$\frac{7}{8}$	$\frac{3}{8}$	$1\frac{7}{8}$

Use the cards to write pairs of fractions with a total of 2

$\boxed{1\frac{7}{8}} + \boxed{\frac{1}{8}} = 2$

$\boxed{\frac{13}{8}} + \boxed{\frac{3}{8}} = 2$

$\boxed{\frac{9}{8}} + \boxed{\frac{7}{8}} = 2$

7 Annie and Dexter both have a skipping rope.

Annie's rope is $\frac{3}{4}$ m shorter than Dexter's rope.

The ropes are $\frac{13}{4}$ m altogether.

How long is each skipping rope?

Annie's rope is $\boxed{1\frac{1}{4}}$ m long.

Dexter's rope is $\boxed{2}$ m long.

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