

Reasoning and Problem Solving

Step 6: Add 2 or More Fractions

National Curriculum Objectives:

Mathematics Year 4: (4F4) [Add and subtract fractions with the same denominator](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Find the missing number to complete the calculations with a given answer when adding 2 or more fractions with the same denominator where answers are < 1 .

Expected Find the missing number to complete the calculations with a given answer when adding 2 or more fractions with the same denominator where answers are > 1 . Answers expressed as an improper fraction and mixed number.

Greater Depth Find the missing number to complete the calculations with a given answer when adding two or more fractions with the same denominator where answers are > 1 . Using some fractions with denominators that are double or half of the previous fraction. Answers expressed as improper fractions and mixed numbers.

Questions 2, 5 and 8 (Problem Solving)

Developing Finding a path through a maze from given start and end points when adding 2 or more fractions with the same denominator where answers are < 1 .

Expected Finding a path through a maze from given start and end points when adding 2 or more fractions with the same denominator where answers are > 1 . Answers expressed as an improper fraction and mixed numbers

Greater Depth Finding a path through a maze from given start and end points when adding two or more fractions with the same denominator where answers are > 1 . Using some fractions with denominators that are double or half of the previous fraction. Answers expressed as improper fractions and mixed numbers.

Questions 3, 6 and 9 (Reasoning)

Developing Finding missing numbers to decide which statement is correct when adding 2 or more fractions with the same denominator where answers are < 1 .

Expected Finding missing numbers to decide which statement is correct adding 2 or more fractions with the same denominator where answers are > 1 . Answers expressed as an improper fraction and mixed numbers.

Greater Depth Finding missing numbers to decide which statement is correct adding two or more fractions with the same denominator where answers are > 1 . Using some fractions with denominators that are double or half of the previous fraction. Answers expressed as improper fractions and mixed numbers.

More [Year 4 Fraction](#) resources.

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Add 2 or More Fractions

1a. Work out the missing numerators when all the calculations equal $\frac{11}{12}$.

A. $\frac{2}{12} + \frac{\square}{12} + \frac{6}{12}$

B. $\frac{\square}{12} + \frac{7}{12} + \frac{2}{12}$

C. $\frac{9}{12} + \frac{\square}{12} + \frac{\square}{12}$

D. $\frac{\square}{12} + \frac{5}{12} + \frac{2}{12}$



PS

Add 2 or More Fractions

1b. Work out the missing numerators when all the calculations equal $\frac{8}{9}$.

A. $\frac{\square}{9} + \frac{2}{9} + \frac{3}{9}$

B. $\frac{\square}{9} + \frac{2}{9} + \frac{1}{9}$

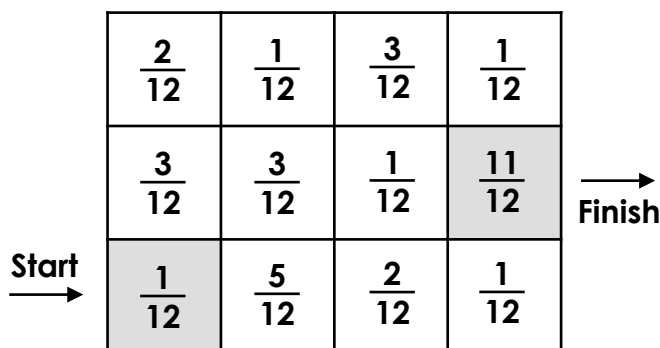
C. $\frac{\square}{9} + \frac{6}{9} + \frac{\square}{9}$

D. $\frac{4}{9} + \frac{\square}{9} + \frac{2}{9}$



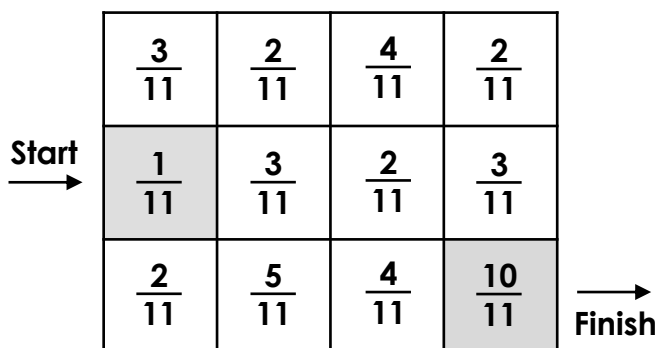
PS

2a. Find a path through the maze by adding fractions together to reach the end number.



PS

2b. Find a path through the maze by adding fractions together to reach the end number.



PS

3a. Steph and Jake are finding missing numbers in a calculation.

$$\frac{4}{9} + \frac{\square}{9} + \frac{\square}{9} = \frac{8}{9}$$



$\frac{2}{9}$ and $\frac{2}{9}$ are missing.

Steph

$\frac{1}{9}$ and $\frac{3}{9}$ are missing.



Jake

Who is correct? Explain how you know.



R

3b. Sinead and Johnny are finding missing numbers in a calculation.

$$\frac{3}{12} + \frac{\square}{12} + \frac{\square}{12} = \frac{11}{12}$$



$\frac{2}{12}$ and $\frac{5}{12}$ are missing.

Sinead

$\frac{6}{12}$ and $\frac{2}{12}$ are missing.



Johnny

Who is correct? Explain how you know.



R

Add 2 or More Fractions

4a. Work out the missing numerators when all the calculations equal $2\frac{1}{7}$.

A. $\frac{4}{7} + \frac{\square}{7} + \frac{5}{7}$

B. $\frac{6}{7} + \frac{\square}{7} + \frac{3}{7}$

C. $\frac{\square}{7} + \frac{5}{7} + \frac{\square}{7}$

D. $\frac{7}{7} + \frac{5}{7} + \frac{\square}{7}$



PS

Add 2 or More Fractions

4b. Work out the missing numerators when all the calculations equal $1\frac{10}{11}$.

A. $\frac{\square}{11} + \frac{5}{11} + \frac{7}{11}$

B. $\frac{9}{11} + \frac{2}{11} + \frac{\square}{11}$

C. $\frac{\square}{11} + \frac{10}{11} + \frac{6}{11}$

D. $\frac{\square}{11} + \frac{9}{11} + \frac{3}{11}$



PS

5a. Find a path through the maze by adding fractions together to reach the end number.

Start →	$\frac{1}{9}$	$\frac{2}{9}$	$\frac{3}{9}$	$\frac{1}{9}$	
	$\frac{1}{9}$	$\frac{3}{9}$	$\frac{1}{9}$	$\frac{4}{9}$	
	$\frac{2}{9}$	$\frac{1}{9}$	$\frac{2}{9}$	$\frac{14}{9}$	→ Finish



PS

5b. Find a path through the maze by adding fractions together to reach the end number.

Start →	$\frac{1}{10}$	$\frac{2}{10}$	$\frac{1}{10}$	$\frac{2}{10}$	
	$\frac{4}{10}$	$\frac{3}{10}$	$\frac{1}{10}$	$\frac{3}{10}$	
	$\frac{2}{10}$	$\frac{5}{10}$	$\frac{2}{10}$	$\frac{19}{10}$	→ Finish



PS

6a. Chuan and Gabriel are finding missing numbers in a calculation.

$$\frac{4}{7} + \frac{\square}{7} + \frac{\square}{7} = \frac{13}{7}$$



Chuan

$\frac{5}{7}$ and $\frac{4}{7}$ are missing.



Gabriel

$\frac{6}{7}$ and $\frac{3}{7}$ are missing.

Who is correct? Explain how you know.



R

6b. Hafsa and Cian are finding missing numbers in a calculation.

$$\frac{3}{10} + \frac{\square}{10} + \frac{\square}{10} = \frac{15}{10}$$



Hafsa

$\frac{5}{10}$ and $\frac{7}{10}$ are missing.



Cian

$\frac{6}{10}$ and $\frac{7}{10}$ are missing.

Who is correct? Explain how you know.



R

Add 2 or More Fractions

7a. Work out the missing numerators when all the calculations equal $1\frac{3}{5}$.

A. $\frac{2}{10} + \frac{\square}{10} + \frac{6}{10}$

B. $\frac{\square}{10} + \frac{7}{10} + \frac{3}{10}$

C. $\frac{7}{10} + \frac{4}{10} + \frac{\square}{10}$

D. $\frac{\square}{10} + \frac{7}{10} + \frac{6}{10}$



PS

Add 2 or More Fractions

7b. Work out the missing numerators when all the calculations equal $1\frac{3}{4}$.

A. $\frac{\square}{8} + \frac{2}{8} + \frac{7}{8}$

B. $\frac{6}{8} + \frac{2}{8} + \frac{\square}{8}$

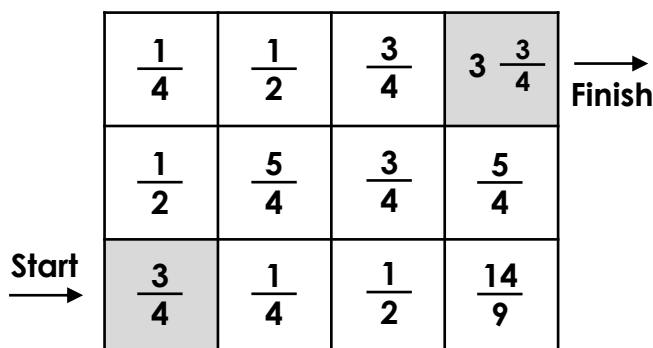
C. $\frac{\square}{8} + \frac{6}{8} + \frac{1}{8}$

D. $\frac{4}{8} + \frac{\square}{8} + \frac{2}{8}$



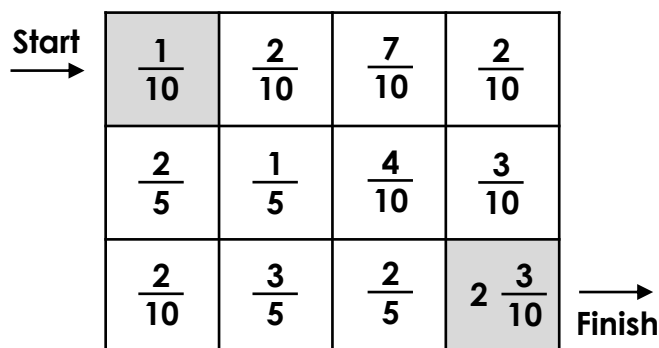
PS

8a. Find a path through the maze by adding fractions together to reach the end number.



PS

8b. Find a path through the maze by adding fractions together to reach the end number.



PS

9a. Isabel and Hannah are finding missing numbers in a calculation.

$$\frac{4}{9} + \frac{\square}{9} + \frac{\square}{9} = 1\frac{8}{9}$$



Isabel

$\frac{6}{9}$ and $\frac{7}{9}$ are missing.



Hannah

$\frac{5}{9}$ and $\frac{8}{9}$ are missing.

Who is correct? Explain how you know.



R

9b. Josh and Kelly are finding missing numbers in a calculation.

$$\frac{5}{8} + \frac{\square}{8} + \frac{\square}{8} = \frac{8}{4}$$



Josh

$\frac{4}{8}$ and $\frac{7}{8}$ are missing.



Kelly

$\frac{2}{8}$ and $\frac{1}{8}$ are missing.

Who is correct? Explain how you know.



R

Reasoning and Problem Solving Add 2 or More Fractions

Developing

1a. **A=3, B=2, C=1 and 1, D=4**

2a.

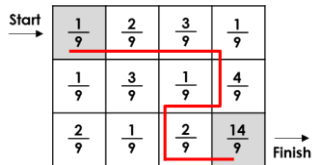


3a. **They are both correct. Both calculations add up to $\frac{8}{9}$**

Expected

4a. **A=6, B=6, C=5 and 5, D=3**

5a.

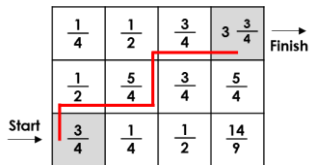


6a. **They are both correct. Both calculations add up to $\frac{13}{7}$**

Greater Depth

7a. **A=8, B=6, C=5, D=3**

8a.



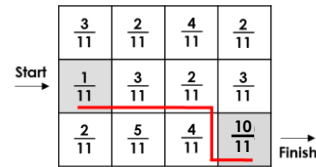
9a. **They are both correct. Both calculations add up to $\frac{17}{9} = 1\frac{8}{9}$**

Reasoning and Problem Solving Add 2 or More Fractions

Developing

1b. **A=3, B=5, C=1 and 1, D=2**

2b.

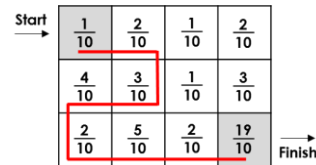


3b. **Johnny is correct. Sinead's numbers add up to $\frac{10}{12}$**

Expected

4b. **A=9, B=10, C=5, D=9**

5b.

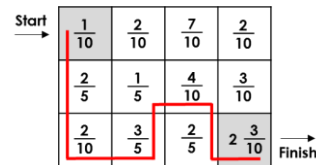


6b. **Hafsa is correct. Cian's numbers add up to $\frac{14}{10}$**

Greater Depth

7b. **A=5, B=6, C=7, D=8**

8b.



9b. **Josh is correct. Kelly has only added the numerators together. Her fractions add up to $\frac{4}{4}$**