

WA6MNACN2

Calculating with number

Core + Challenge

Adding and Subtracting Fractions

I can add and subtract fractions with related denominators, including mixed numerals.

Name: _____ Date: _____ Score: _____ / 56

Key idea

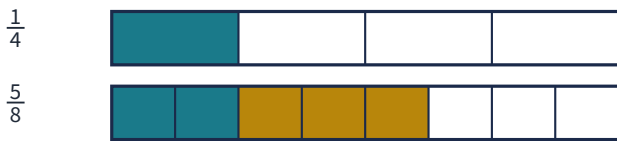
Related denominators: one denominator is a multiple of the other, like 4 and 8, or 3 and 12.

Rename one fraction so both have the **same** denominator. Then add or subtract the numerators. The denominator does **not** change.

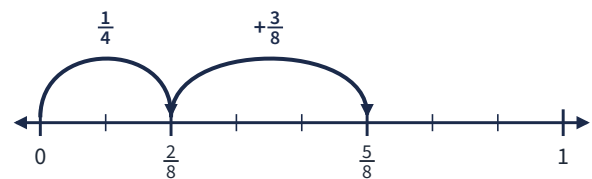
Example: $\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$.

Mixed numerals: add the wholes, then the fractions. $1\frac{1}{2} + 2\frac{1}{4} = 3 + \frac{2}{4} + \frac{1}{4} = 3\frac{3}{4}$.

$\frac{1}{4}$ is the same as $\frac{2}{8}$. Add $\frac{3}{8}$ more:



On a number line:



A Warm up *shade bars and jump on number lines*

/ 16 marks

Shade the first fraction on the bar. Then shade the second fraction next to it. Write the total. 1 mark each.

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



2 $\frac{1}{4} + \frac{1}{8} =$



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



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



5 $\frac{1}{5} + \frac{3}{10} =$



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



7 $\frac{1}{4} + \frac{5}{12} =$



8 $\frac{1}{2} + \frac{3}{10} =$



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Write the missing numerator. 1 mark each.

9 $\frac{3}{4} - \frac{1}{8} = \frac{\boxed{}}{8}$

10 $\frac{5}{6} - \frac{1}{3} = \frac{\boxed{}}{6}$

11 $\frac{7}{10} - \frac{1}{5} = \frac{\boxed{}}{10}$

12 $\frac{2}{3} - \frac{1}{12} = \frac{\boxed{}}{12}$

The dot shows the first number. Draw a jump to show the calculation. Write the answer. 1 mark each.

13 $\frac{3}{4} + \frac{1}{2} =$

14 $1\frac{1}{3} - \frac{5}{6} =$



15 $2\frac{1}{2} + \frac{3}{4} =$

16 $1\frac{1}{5} - \frac{3}{10} =$



B

Practise use the skill

/ 21 marks

1 Use the fraction wall to help you. a) $\frac{1}{2} + \frac{1}{4}$ b) $\frac{3}{4} - \frac{3}{8}$ c) $\frac{1}{8} + \frac{1}{2} + \frac{1}{4}$

[3 marks]

1							
$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

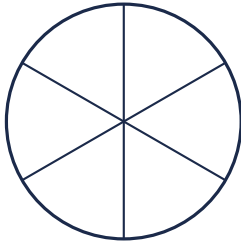
a) _____

b) _____

c) _____

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- 2 Ava ate $\frac{1}{3}$ of a pizza. Ben ate $\frac{1}{6}$ of the same pizza. Shade the slices they ate. What fraction of the pizza did they eat altogether? What fraction is left? [2 marks]



Answer: _____

- 3 Mia cycles $2\frac{3}{4}$ km from Thomson Bay to The Basin on **Rottnest Island**. Then she cycles $1\frac{1}{2}$ km to Geordie Bay. The dot shows $2\frac{3}{4}$. Draw jumps to add $1\frac{1}{2}$. How far does Mia cycle altogether? [2 marks]



Answer: _____

- 4 A jug holds $\frac{7}{8}$ L of juice. Lucas pours out $\frac{1}{4}$ L. Shade $\frac{7}{8}$ of the bar. Then cross out the $\frac{1}{4}$ that Lucas poured. How much juice is left? [2 marks]



Answer: _____

- 5 Complete the table. Rename one fraction so both fractions have the same denominator. [3 marks]

Calculation	Same denominator	Answer
$\frac{2}{5} + \frac{3}{10}$		
$\frac{5}{6} - \frac{2}{3}$		
$\frac{3}{4} + \frac{5}{8}$		

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- 6 Draw a line from each calculation to its answer.

[2 marks]

$$\frac{1}{2} + \frac{3}{8}$$

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

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

$$\frac{7}{8}$$

$$\frac{3}{5} + \frac{3}{10}$$

$$\frac{1}{2}$$

$$\frac{11}{12} - \frac{1}{4}$$

$$\frac{9}{10}$$

- 7 At the **school fete**, the cake stall has $3\frac{1}{2}$ chocolate cakes and $2\frac{3}{4}$ banana cakes left. **a)** How many cakes are left altogether? **b)** How many more chocolate cakes than banana cakes are left?

[2 marks]

- 8 Kai trains for his **AFL** team for $1\frac{1}{4}$ hours on Monday, $\frac{3}{4}$ of an hour on Wednesday and $1\frac{1}{2}$ hours on Saturday. His goal is **4 hours** a week. How much more time does he need to train to reach his goal?

[2 marks]

Answer: _____

- 9 A school garden bed has 12 equal parts. Carrots are planted in $\frac{1}{3}$ of it, beans in $\frac{1}{4}$ and lettuce in $\frac{1}{6}$. Shade and label each vegetable (C, B, L). What fraction of the garden bed is **empty**?

[3 marks]

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Answer: _____

C

Think it through *explain your thinking*

/ 10 marks

- 1 Zoe says $\frac{1}{4} + \frac{1}{8} = \frac{2}{12}$. Do you agree with Zoe? Explain her mistake and give the correct answer. [2 marks]

- 2 **True or false?** $\frac{2}{3} - \frac{1}{6} = \frac{1}{2}$. Shade the bar to prove your answer. [2 marks]

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- 3 **Always, sometimes or never true?** “When you add two fractions that are each less than 1, the answer is less than 1.” Give examples. Circle one below. [2 marks]

Always

Sometimes

Never

- 4 Which calculation is the **odd one out**? $\frac{3}{4} - \frac{1}{4}$, $\frac{1}{4} + \frac{1}{4}$, $\frac{5}{8} - \frac{1}{4}$, $\frac{1}{3} + \frac{1}{6}$ Explain. [2 marks]

- 5 Lily works out $3\frac{1}{4} - 1\frac{1}{2}$ by **counting up** from $1\frac{1}{2}$ to $3\frac{1}{4}$. Draw her jumps on the number line. What is the answer? Explain why counting up gives the answer to a subtraction. [2 marks]



D**Challenge** *stretch yourself*

/ 9 marks

- 1 Find **all** the ways to complete $\frac{\square}{4} + \frac{\square}{8} = 1$ using whole numbers of 1 or more. [3 marks]

Explain how you know you have found them all.

- 2 A water tank started the week partly full. On Monday $\frac{1}{4}$ of a tank was used. On Tuesday $\frac{3}{8}$ of a tank was used. On Wednesday it rained and $\frac{1}{2}$ of a tank of water was added. Now the tank is $\frac{5}{8}$ full. How full was the tank at the **start**? Show your working. [3 marks]

Answer: _____

- 3 In this **magic square**, every row, column and diagonal adds to $1\frac{7}{8}$. Complete the square. [3 marks]

$\frac{1}{4}$		$\frac{3}{4}$
	$\frac{5}{8}$	
	$\frac{3}{8}$	

How did I go?

Warm up ___ / 16 Practise ___ / 21 Think it through ___ / 10 Challenge ___ / 9 **Total** ___ / 56

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