

Reasoning and Problem Solving

Step 6: Add Fractions

National Curriculum Objectives:

Mathematics Year 3: (3F4) [Add and subtract fractions with the same denominator within one whole \[for example, \$5/7 + 1/7 = 6/7\$ \]](#)

Mathematics Year 3: (3F10) [Solve problems that involve the above objectives](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Two fractions are added where the denominator is less than 10. Explain why the answer given is correct or incorrect.

Expected Two or three fractions are added where the denominator is less than 12. Explain why the answer given is correct or incorrect.

Greater Depth Three fractions are added where the denominator is less than 12 when in its simplest form (where one equivalent fraction needs simplifying). Explain why the answer given is correct or incorrect.

Questions 2, 5 and 8 (Problem Solving)

Developing Given a pictorial representation of a fraction, find three combinations of two fractions that will add up to the given fraction.

Expected Given a pictorial representation of a fraction, find three combinations of three fractions that will add up to the given fraction.

Greater Depth Given a pictorial representation of a fraction, find three combinations of three fractions that will add up to the given fraction.

Questions 3, 6 and 9 (Problem Solving)

Developing Solve a word problem that requires adding two fractions where the denominator is less than 10.

Expected Solve a word problem that requires adding three fractions where the denominator is less than 12.

Greater Depth Solve a word problem that requires adding three fractions where the denominator is less than 12 when in its simplest form (where one equivalent fraction needs simplifying).

More [Year 3 Fractions](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Add Fractions

1a. Finn says,



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

Is he correct? Explain why.



R

Add Fractions

1b. Caitlyn says,



$$\frac{3}{4} + \frac{0}{4} = \frac{0}{4}$$

Is she correct? Explain why.



R

2a. This is the answer.



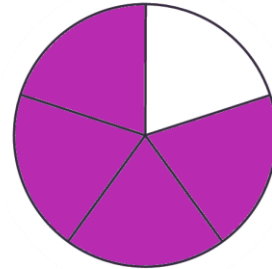
What fractions could you have added together to get this answer?

Find three possible combinations.



PS

2b. This is the answer.



What fractions could you have added together to get this answer?

Find three possible combinations.



PS

3a. Katie bought a pack of four stickers. She stuck two stickers on her pencil case and stuck one on her diary. What fraction of the pack was used? How do you know?



PS

3b. Kendrick cut a cupcake into four pieces to share. He ate one piece, but his friend Marcus wasn't hungry. What fraction of the cupcake have they eaten altogether? How do you know?



PS

Add Fractions

4a. Kamir says,



$$\frac{2}{5} + \frac{2}{5} + \frac{2}{5} = \frac{2}{15}$$

Is he correct? Explain why.



R

Add Fractions

4b. Georgina says,



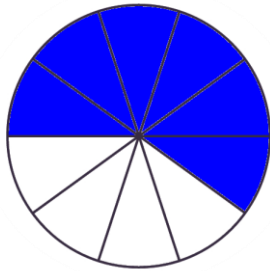
$$\frac{4}{11} + \frac{5}{11} + \frac{1}{11} = \frac{10}{11}$$

Is she correct? Explain why.



R

5a. This is the answer.



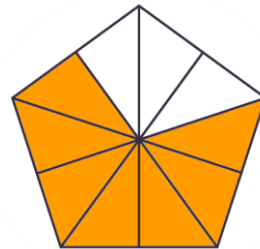
What fractions could you have added together to get this answer?

Find three possible combinations.



PS

5b. This is the answer.



What fractions could you have added together to get this answer?

Find three possible combinations.



PS

6a. A large pizza has eight slices. Hamish eats three slices, Louisa eats three slices and Matthew eats 1 slice. What fraction of the pizza have they eaten? How do you know?



PS

6b. A chocolate bar has twelve squares. Paula eats five squares; Maurice and Jeremy eat two squares each. What fraction of the chocolate bar have they eaten? How do you know?



PS

Add Fractions

7a. Joshua says,



$$\frac{6}{11} + \frac{1}{11} + \frac{6}{22} = \frac{10}{11}$$

Is he correct? Explain why.



R

Add Fractions

7b. Dakota says,



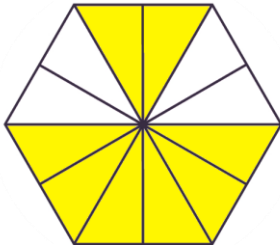
$$\frac{3}{12} + \frac{6}{24} + \frac{3}{12} = \frac{12}{48}$$

Is she correct? Explain why.



R

8a. This is the answer.



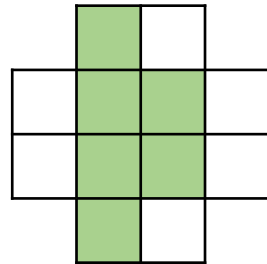
What fractions could you have added together to get this answer?

Find three possible combinations.



PS

8b. This is the answer.



What fractions could you have added together to get this answer?

Find three possible combinations.



PS

9a. Tammy bought a box of 12 doughnuts to share. She ate two and Yulia ate three. Dennis ate $\frac{8}{24}$ doughnuts from the original total.

What fraction of the box of doughnuts did they eat altogether? How do you know?



PS

9b. Gerald sliced an apple into 11 pieces. He ate $\frac{20}{55}$ slices from the original total. He then gave three slices to each of his friends Paul and Lola. What fraction of the apple did they eat altogether? How do you know?



PS

Reasoning and Problem Solving

Add Fractions

Developing

1a. Finn is incorrect because he has added the denominators as well as the numerators. The correct answer is $\frac{3}{4}$

2a. Various possible answers, for example:

$$\frac{0}{4} + \frac{3}{4}, \frac{1}{4} + \frac{2}{4} \text{ and } \frac{2}{4} + \frac{1}{4}$$

3a. $\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$

Expected

4a. Kamir is incorrect because he has added the denominators instead of the numerators. The correct answer is $\frac{6}{5}$

5a. Various possible answers, for example:

$$\frac{0}{10} + \frac{6}{10}, \frac{1}{10} + \frac{5}{10} \text{ and } \frac{2}{10} + \frac{4}{10}$$

6a. $\frac{3}{8} + \frac{3}{8} + \frac{1}{8} = \frac{7}{8}$

Greater Depth

7a. Joshua is correct because he has simplified $\frac{6}{22}$ to $\frac{3}{11}$ in order to match the denominators in the other numbers in order to get the correct answer.

8a. Various possible answers, for example:

$$\frac{0}{12} + \frac{8}{12}, \frac{1}{12} + \frac{7}{12} \text{ and } \frac{2}{12} + \frac{6}{12}$$

9a. $\frac{2}{12} + \frac{3}{12} + \frac{4}{12} = \frac{9}{12}$

Reasoning and Problem Solving

Add Fractions

Developing

1b. Caitlyn is incorrect because she has incorrectly added the numerators. The correct answer is $\frac{3}{4}$

2b. Various possible answers, for example:

$$\frac{0}{5} + \frac{4}{5}, \frac{1}{5} + \frac{3}{5} \text{ and } \frac{2}{5} + \frac{2}{5}$$

3b. $\frac{1}{4} + \frac{0}{4} = \frac{1}{4}$

Expected

4b. Georgina is correct because she has only added the numerators. The denominators have stayed the same.

5b. Various possible answers, for example:

$$\frac{0}{10} + \frac{7}{10}, \frac{1}{10} + \frac{6}{10} \text{ and } \frac{2}{10} + \frac{5}{10}$$

6b. $\frac{5}{12} + \frac{2}{12} + \frac{2}{12} = \frac{9}{12}$

Greater Depth

7b. Dakota is incorrect because she has added the denominators along with the numerators. The correct answer is $\frac{9}{12}$

8b. Various possible answers, for example:

$$\frac{0}{12} + \frac{6}{12}, \frac{1}{12} + \frac{5}{12} \text{ and } \frac{2}{12} + \frac{4}{12}$$

9b. $\frac{4}{11} + \frac{3}{11} + \frac{3}{11} = \frac{10}{11}$