

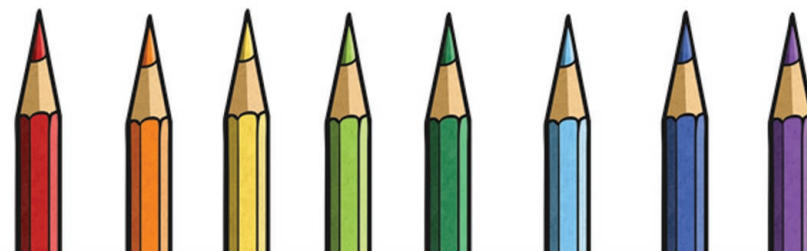
# Year 6 Maths Mastery Add and Subtract Fractions Challenge Cards



## Year 6 Maths Mastery Challenge Cards

1. A teacher wants to share some pencils between 2 groups of children, offering one group  $\frac{3}{4}$  and the other  $\frac{2}{5}$  of the pencils.

Explain how you could add the fractions to show this is not possible.



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2. Spot the errors and correctly calculate.

$$\frac{5}{6} + \frac{7}{8} = \frac{30}{36} + \frac{28}{36} = \frac{58}{36} = 1 \frac{22}{36} = 1 \frac{11}{18}$$

$$\frac{7}{10} + \frac{5}{12} = \frac{45}{60} + \frac{24}{60} = \frac{69}{60} = 1 \frac{9}{60} = 1 \frac{1}{10}$$

$$1 \frac{3}{8} + 2 \frac{2}{3} = 1 \frac{9}{24} + 2 \frac{16}{24} = \frac{25}{24}$$

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3. 3 friends order some pizzas. One eats  $\frac{7}{8}$  of a pizza, another  $\frac{5}{6}$  and the last  $\frac{1}{3}$  of a pizza. They have less than a whole pizza left. How many pizzas did they order, and what fraction is left?



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4. Sami adds two fractions together and got  $\frac{3}{4}$  as the answer.

Write down what the fractions could be. How many pairs of fractions can you come up with?



5. Give as many reasons as you can to explain why  $\frac{9}{10} - \frac{1}{4} \neq \frac{8}{6}$ .

Share your ideas in a group. How many different reasons can you come up with?



6. Shelley writes down 2 fractions with a difference of  $\frac{1}{6}$ . Write down some pairs of fractions that Shelley could have written down, expressing all fractions in their simplest form.

Draw a visual representation of one pair of fractions to show the difference is  $\frac{1}{6}$ . Share this with a partner.



7. Alice's mother bakes some cupcakes for a party. She puts  $\frac{3}{4}$  of the cakes out at the party, and  $\frac{3}{5}$  of all the cakes are eaten.

What fraction of all the cakes are put out at the party but not eaten?



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## Answers

1. The fractions need to be expressed with the same denominator.

The lowest common multiple of 4 and 5 is 20, so express the fractions as 20<sup>th</sup>.

$$\frac{3}{4} + \frac{2}{5} = \frac{15}{20} + \frac{8}{20} = \frac{23}{20} = 1\frac{3}{20}$$

This is more than 1 whole, so the pencils cannot be shared with these fractions.

$$2. \frac{5}{6} + \frac{7}{8} = \frac{20}{24} + \frac{21}{24} = \frac{41}{24} = 1\frac{17}{24}$$

$$\frac{7}{10} + \frac{5}{12} = \frac{42}{60} + \frac{25}{60} = \frac{67}{60} = 1\frac{7}{60} \quad (\text{also } 1\frac{9}{60} = 1\frac{3}{20})$$

$$3\frac{25}{24} = 4\frac{1}{24}$$

$$3. \frac{7}{8} + \frac{5}{6} + \frac{1}{3} = \frac{21}{24} + \frac{20}{24} + \frac{8}{24} = \frac{49}{24} = 2\frac{1}{24}$$

They ordered 3 pizzas and  $\frac{23}{24}$  was left.

$$4. \frac{1}{2} + \frac{1}{4}, \frac{3}{8} + \frac{3}{8}, \frac{5}{8} + \frac{1}{8}, \frac{1}{8} + \frac{1}{12} \dots$$

$$5. \frac{9}{10} < 1, \text{ so } \frac{9}{10} - \frac{1}{4} < 1 \text{ but } \frac{8}{6} > 1$$

$$\frac{9}{10} - \frac{1}{4} = 0.9 - 0.25 = 0.65 \text{ but } \frac{8}{6} = 1.33$$

$$\frac{9}{10} - \frac{1}{4} = \frac{18}{20} - \frac{5}{20} = \frac{13}{20}$$

$$6. \frac{5}{6} - \frac{2}{3}, \frac{2}{3} - \frac{1}{2}, \frac{1}{3} - \frac{1}{6}, \frac{1}{2} - \frac{1}{3}, \dots$$



$$7. \frac{3}{4} - \frac{3}{5} = \frac{15}{20} - \frac{12}{20} = \frac{3}{20}$$