

Fractions

KS3 Maths · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Simplify $18/24$

Step 1 · Find the HCF of 18 and 24

$$18 = 2 \times 3^2, 24 = 2^3 \times 3 \rightarrow \text{HCF} = 6$$

Step 2 · Divide numerator and denominator by the HCF

$$18 \div 6 = 3, 24 \div 6 = 4$$

Step 3 · Write the simplified fraction

$$18/24 = 3/4$$

Answer: $3/4$

Check: $3 \div 4 = 0.75 = 18 \div 24$ ✓

2. Now try one with the steps

Work out $3/4 + 2/5$

Step 1 · Find the LCM of the denominators (4 and 5)

Step 2 · Convert both fractions to 20ths

Step 3 · Add the numerators (denominators stay the same)

Step 4 · Write mixed number

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. Simplify $20/36$. [1]

2. Write $3\frac{3}{4}$ improper fraction. [1]

3. Work out $\frac{2}{3} + \frac{1}{2}$. [2]

4. Calculate $\frac{3}{4} \times \frac{2}{3}$. [2]

5. Work out $\frac{4}{5} \div \frac{2}{3}$. [2]

6. Find $\frac{3}{5}$ of 45. [2]

7. Simplify 45/60. [1]

8. Write $2\frac{3}{5}$ mixed number. [1]

9. Work out $\frac{5}{6} - \frac{1}{4}$. [2]

10. Work out $\frac{2}{3} \times 15$. [1]

11. Which is larger: $\frac{5}{8}$ or $\frac{3}{5}$? [2]

12. Work out $1\frac{1}{2} + 2\frac{2}{3}$. Give your answer mixed number. [2]

13. Work out $\frac{3}{8} \div \frac{3}{4}$. [2]

14. Work out $2\frac{1}{4} \times 1\frac{1}{3}$. [2]

15. Work out $4 - 1\frac{5}{6}$. [2]

16. A flapjack recipe uses $\frac{3}{4}$ of a cup of oats per batch. How many batches can Priya make with 6 cups of oats? [2]

17. Find the fraction exactly halfway between $\frac{1}{3}$ and $\frac{1}{2}$. [3]

4. Before you hand it in

When adding: $\frac{1}{2} + \frac{1}{3} = \frac{2}{5}$ (adding tops, adding bottoms)

Find the common denominator first. $\frac{1}{2} = \frac{3}{6}$, $\frac{1}{3} = \frac{2}{6}$, so $\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$. The denominators never add.

When multiplying: $\frac{1}{2} \times \frac{1}{3} = \frac{1}{2}$ (forgetting to multiply the denominator)

Multiply top $\times$ top AND bottom $\times$ bottom. $\frac{1}{2} \times \frac{1}{3} = \frac{(1 \times 1)}{(2 \times 3)} = \frac{1}{6}$.

When dividing: $\frac{1}{2} \div \frac{1}{3} = \frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$ (forgetting to flip the second fraction)

Keep-Change-Flip: $\frac{1}{2} \div \frac{1}{3} = \frac{1}{2} \times \frac{3}{1} = \frac{3}{2} = 1\frac{1}{2}$. Always flip the second fraction before multiplying.

Not simplifying the final answer: leaving $\frac{6}{12}$ instead of $\frac{1}{2}$

Always check if the final answer can be simplified. Find the HCF of numerator and denominator and divide both.