

ADDING FRACTIONS

Essential Question: How do you add fractions with unlike denominators?

$\frac{5}{12}$ ← numerator
 $\frac{5}{12}$ ← denominator

$$\frac{4}{15} + \frac{7}{15} = \frac{11}{15}$$

To add fractions, the denominators must be the same. Once they are the same, add the numerators and put the sum over the denominator.

Add the fractions. Write the answer in simplest form.

1) $\frac{5}{8} + \frac{1}{6}$

$$\frac{5 \cdot 3}{8 \cdot 3} + \frac{1 \cdot 4}{6 \cdot 4} = \frac{15}{24} + \frac{4}{24} = \frac{19}{24}$$

2) $\frac{3}{5} + \frac{5}{6}$

$$\frac{3 \cdot 6}{5 \cdot 6} + \frac{5 \cdot 5}{6 \cdot 5} = \frac{18}{30} + \frac{25}{30} = \frac{43}{30}$$

3) $5\frac{2}{3} + 2\frac{1}{4}$

$$5\frac{2 \cdot 4}{3 \cdot 4} + 2\frac{1 \cdot 3}{4 \cdot 3} = 5\frac{8}{12} + 2\frac{3}{12} = 7\frac{11}{12}$$

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

$$3\frac{1}{6} + 4\frac{2 \cdot 2}{3 \cdot 2} = 3\frac{1}{6} + 4\frac{4}{6} = 7\frac{5}{6}$$

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5) $\frac{1}{6} + \frac{5}{9}$

$$\frac{1 \cdot 3}{6 \cdot 3} + \frac{5 \cdot 2}{9 \cdot 2} = \frac{3}{18} + \frac{10}{18} = \frac{13}{18}$$

6) $\frac{2}{3} + \frac{5}{12}$

$$\frac{2 \cdot 4}{3 \cdot 4} + \frac{5}{12} = \frac{8}{12} + \frac{5}{12} = \frac{13}{12}$$

7) $7\frac{3}{10} + 3\frac{2}{3}$

$$7\frac{3 \cdot 3}{10 \cdot 3} + 3\frac{2 \cdot 10}{3 \cdot 10} = 7\frac{9}{30} + 3\frac{20}{30} = 10\frac{29}{30}$$

8) $6\frac{3}{25} + 7\frac{1}{2}$

$$6\frac{3 \cdot 2}{25 \cdot 2} + 7\frac{1 \cdot 25}{2 \cdot 25} = 6\frac{6}{50} + 7\frac{25}{50} = 13\frac{31}{50}$$

A recipe calls for $\frac{1}{2}$ cup of chopped walnuts and $\frac{3}{5}$ cup of diced walnuts. In total how many cups of walnuts did the recipe call for?

$$\frac{1 \cdot 5}{2 \cdot 5} + \frac{3 \cdot 2}{5 \cdot 2} = \frac{5}{10} + \frac{6}{10} = \frac{11}{10} \text{ or } 1\frac{1}{10}$$

The recipe called for $1\frac{1}{10}$ cups of walnuts.

STEPS FOR ADDING FRACTIONS WITH UNLIKE DENOMINATORS

- 1) Find the Lowest Common Denominator (LCD) of the fractions. This is the same as the Least Common Multiple.
- 2) Rewrite fractions as equivalent fractions by multiplying the numerator and denominator of each fraction by a number so that they have the LCM as their new denominator.
- 3) Add the numerators and keep the denominator the same. If there are whole numbers, add them.
- 4) Simplify the fractions, if necessary, by dividing the numerator and denominator by the GCF.