

SUBTRACTING FRACTIONS

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

$$\begin{array}{l} \text{numerator} \rightarrow \frac{7}{12} - \frac{2}{12} = \frac{5}{12} \\ \text{denominator} \end{array}$$

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

Subtract the fractions. Write the answer in simplest form.

1) $\frac{2}{7} - \frac{1}{8}$

$$\begin{array}{r} 2 \cdot 8 \\ \frac{2 \cdot 8}{7 \cdot 8} - \frac{1 \cdot 7}{8 \cdot 7} \\ \frac{16}{56} - \frac{7}{56} = \frac{9}{56} \end{array}$$

2) $\frac{15}{24} - \frac{7}{12}$

$$\begin{array}{r} 15 \\ \frac{15}{24} - \frac{7 \cdot 2}{12 \cdot 2} \\ \frac{15}{24} - \frac{14}{24} = \frac{1}{24} \end{array}$$

3) $8\frac{5}{9} - 2\frac{1}{3}$

$$\begin{array}{r} 8\frac{5}{9} - 2\frac{1 \cdot 3}{3 \cdot 3} \\ 8\frac{5}{9} - 2\frac{3}{9} \\ 6\frac{2}{9} \end{array}$$

4) $5\frac{1}{5} - 1\frac{1}{7}$

$$\begin{array}{r} 5\frac{1 \cdot 7}{5 \cdot 7} - 1\frac{1 \cdot 5}{7 \cdot 5} \\ 5\frac{7}{35} - 1\frac{5}{35} = 4\frac{2}{35} \end{array}$$

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5) $\frac{4}{7} - \frac{1}{4}$

$$\begin{array}{r} 4 \cdot 4 \\ \frac{4 \cdot 4}{7 \cdot 4} - \frac{1 \cdot 7}{4 \cdot 7} \\ \frac{16}{28} - \frac{7}{28} = \frac{9}{28} \end{array}$$

6) $4\frac{3}{4} - 2\frac{3}{10}$

$$\begin{array}{r} 4\frac{3 \cdot 5}{4 \cdot 5} - 2\frac{3 \cdot 2}{10 \cdot 2} \\ 4\frac{15}{20} - 2\frac{6}{20} = 2\frac{9}{20} \end{array}$$

7) $6\frac{5}{7} - 2\frac{1}{3}$

$$\begin{array}{r} 6\frac{5 \cdot 3}{7 \cdot 3} - 2\frac{1 \cdot 7}{3 \cdot 7} \\ 6\frac{15}{21} - 2\frac{7}{21} \\ 4\frac{8}{21} \end{array}$$

8) $10\frac{2}{3} - 2\frac{1}{4}$

$$\begin{array}{r} 10\frac{2 \cdot 4}{3 \cdot 4} - 2\frac{1 \cdot 3}{4 \cdot 3} \\ 10\frac{8}{12} - 2\frac{3}{12} \\ 8\frac{5}{12} \end{array}$$

You have $3\frac{3}{4}$ pounds of taffy. You eat $1\frac{1}{3}$ pound of taffy. How many pounds of taffy do you have left?

$$\begin{array}{r} 3\frac{3 \cdot 3}{4 \cdot 3} - 1\frac{1 \cdot 4}{3 \cdot 4} \\ 3\frac{9}{12} - 1\frac{4}{12} = 2\frac{5}{12} \end{array}$$

You have $2\frac{5}{12}$ pounds of taffy left.

STEPS FOR SUBTRACTING 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) Subtract the numerators and keep the denominator the same. If there are whole numbers, subtract them.
- 4) Simplify the fractions, if necessary, by dividing the numerator and denominator by the GCF.