

Fractions  
Presented by QSC

Fractions with Pies

$$\frac{5}{8} - \frac{1}{4} = \frac{3}{8}$$

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

$$\frac{1}{3} + \frac{1}{6} = \frac{3}{6} = \frac{1}{2}$$

$$\frac{2}{3} - \frac{1}{2} = \frac{1}{6}$$

Rules for Addition and Subtraction

1. Make sure the fractions have a common denominator. If they do not, multiply numerator and denominator of the fraction by the value which will give them a common denominator.
2. Add (or subtract) the values from the numerator, left to right, and leave the denominator as is.

Practice, Using Common Denominators

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

$$\frac{5}{6} - \frac{2}{3} = \frac{5}{6} - \frac{4}{6} = \frac{1}{6}$$

$$\frac{5}{6} + \frac{3}{8} = \frac{5 * 4}{6 * 4} + \frac{3 * 3}{8 * 3} = \frac{20}{24} + \frac{9}{24} = \frac{29}{24}$$

Practice, Using Butterfly Method

$$\frac{5}{6} + \frac{1}{3} = \frac{5 * 3 + 1 * 6}{6 * 3} = \frac{15 + 6}{18} = \frac{21}{18} = \frac{7}{6}$$

$$\frac{5}{6} - \frac{2}{3} = \frac{5 * 3 - 2 * 6}{6 * 3} = \frac{15 - 12}{18} = \frac{3}{18} = \frac{1}{6}$$

$$\frac{5}{6} + \frac{3}{8} = \frac{5 * 8 + 3 * 6}{6 * 8} = \frac{40 + 18}{48} = \frac{58}{48} = \frac{29}{24}$$

### Rules for Multiplication and Division

- Multiplication of fractions: Multiplying straight across. Multiply values in the numerator together, over the values of the denominator multiplied together.
- Division of fractions: **keep** the first fraction, **change** the division into multiplication, and **flip** the second fraction into its reciprocal.

### Practice

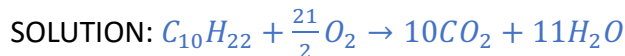
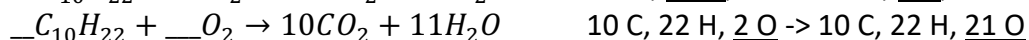
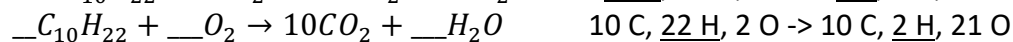
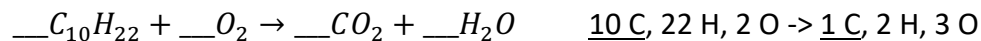
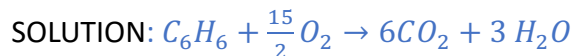
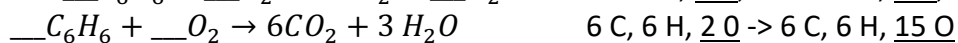
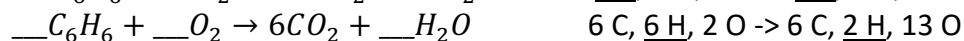
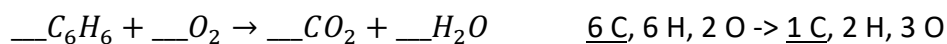
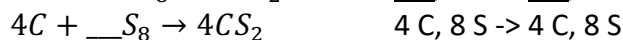
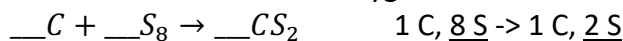
$$\frac{7}{10} * \frac{4}{5} = \frac{7 * 4}{10 * 5} = \frac{28}{50} = \frac{14}{25}$$

$$\frac{\frac{7}{10}}{\frac{4}{5}} = \frac{7}{10} * \frac{5}{4} = \frac{7 * 5}{10 * 4} = \frac{35}{40} = \frac{7}{8}$$

$$\frac{4}{5} \div \frac{7}{10} = \frac{4}{5} * \frac{10}{7} = \frac{4 * 10}{5 * 7} = \frac{40}{35} = \frac{8}{7}$$

### Scientific Applications (Chemistry Examples)

TIP: Deal with Oxygen last



Workshop Survey:



QSC Workshops:



More Practice:

