Reducing Fractions:

\[
\frac{8}{12} = \frac{2}{3}
\]

\[
\frac{42}{231} = \frac{2}{11}
\]

Multiplying Fractions:

\[
\frac{8}{12} \cdot \frac{5}{18} = \frac{2}{3} \cdot \frac{5}{9} = \frac{10}{27}
\]

\[
\frac{3x^2}{2yz} \cdot \frac{4y^3}{3x} = \frac{2x}{y}
\]

Dividing Fractions:

\[
\frac{2}{3} \div \frac{5}{6} = \frac{2 \cdot 6}{3 \cdot 5} = \frac{4}{5}
\]

\[
\frac{2x^2}{3y} \div \frac{4y}{6xy} = \frac{2x^2}{3y} \cdot \frac{6xy}{4y} = \frac{3x^3}{2}
\]
Answers

Reducing Fractions: (factor the numerator and denominator and cancel common factors)

\[ \frac{8}{12} = \frac{2\cdot2\cdot2}{2\cdot2\cdot3} = \frac{2}{3} \]

\[ \frac{42}{231} = \frac{2\cdot3\cdot7}{3\cdot7\cdot11} = \frac{2}{11} \]

Multiplying Fractions: (cancel common factors between numerators and denominators and then multiply numerator to numerator and denominator to denominator)

\[ \frac{8}{12} \cdot \frac{5}{18} = \frac{2\cdot4}{3\cdot9} \cdot \frac{5}{9} = \frac{5}{27} \]

\[ \frac{3x^2}{2yz} \cdot \frac{4y^3}{3x} = \frac{2xy^2}{z} \]

Dividing Fractions: (multiply the first fraction by the reciprocal of the second fraction)

\[ \frac{2}{3} \div \frac{5}{6} = \frac{2\cdot6}{3\cdot5} = \frac{4}{5} \]

\[ \frac{2x^2}{3y} \div \frac{4y}{6xy} = \frac{2x^2}{3y} \cdot \frac{6xy}{4y} = \frac{x^3}{y} \]