

ADVANCED MULTIPLYING FRACTIONS

Your child must master operations with fractions because they are foundational for algebra.

Fractions do not need to have the same denominator when multiplied.

After working through this Maths sheet, use these patterns to create additional questions for your child's practice

A. To get the answer, multiply the numerators and then multiply the denominators

$$\begin{array}{|c|c|} \hline 1/2 & 1/2 \\ \hline \end{array} \times \begin{array}{|c|c|} \hline 1/4 & 1/4 \\ \hline 1/4 & 1/4 \\ \hline \end{array} = \frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$$

NOTE: Substituting decimals for the above fractions gives the same answer: $0.5 \times 0.25 = 0.125$

B. To get the answer, multiply the numerators and then multiply the denominators.

$$\begin{array}{|c|c|} \hline 3/4 & 1/4 \\ \hline 1/4 & 1/4 \\ \hline \end{array} \times \begin{array}{|c|c|} \hline 1/4 & 1/4 \\ \hline 1/4 & 1/4 \\ \hline \end{array} = \frac{3}{4} \times \frac{1}{4} = \frac{3}{16}$$

NOTE: Substituting decimals for the above fractions gives the same answer: $0.75 \times 0.25 = 0.1875$

C. To get the answer, multiply the numerators and then multiply the denominators.

$$\begin{array}{|c|c|} \hline 1/4 & 1/4 \\ \hline 1/4 & 1/4 \\ \hline \end{array} \times \begin{array}{|c|c|c|c|} \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline \end{array} = \frac{3}{4} \times \frac{8}{16} = \frac{24}{64} = \frac{3}{8}$$

Divide numerator and denominator by 8 to reduce 24/64 to 3/8.

8/16 could be changed to equivalent fraction 1/2 before multiplying to get 3/8.

D. To get the answer, multiply the numerators and then multiply the denominators. Before this can be done, mixed numerals must be changed to improper fractions.

$$\begin{array}{|c|c|} \hline 1/4 & 1/4 \\ \hline 1/4 & 1/4 \\ \hline \end{array} \times \begin{array}{|c|c|} \hline 1/4 & 1/4 \\ \hline 1/4 & 1/4 \\ \hline \end{array} \times \begin{array}{|c|c|c|c|} \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline \end{array} \times \begin{array}{|c|c|c|c|} \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline 1/16 & 1/16 & 1/16 & 1/16 \\ \hline \end{array} =$$

$$1 \frac{1}{4} \times 1 \frac{1}{16} = \frac{5}{4} \times \frac{17}{16} = \frac{85}{64} = 1 \frac{21}{64}$$

The improper fraction answer 85/64 should be changed to a mixed numeral answer 1 21/64.

E. To get the answer, multiply the numerators and then multiply the denominators. Before this can be done, mixed numerals must be changed to improper fractions.

$$2 \frac{2}{3} \times 3 \frac{3}{4} = \frac{8}{3} \times \frac{15}{4} = \frac{120}{12} = 8$$

The improper fraction answer 120/12 should be changed to a mixed numeral answer which turns out to be the whole number 8 in this case.