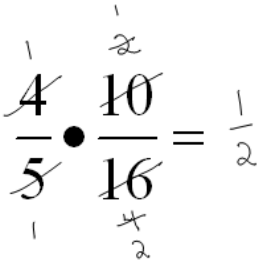
Fractions: Multiplication

Multiplying fractions

To **multiply fractions**, multiply the numerators and then multiply the denominators. To work with smaller numbers, remove the common factors before multiplying.

Example:



The factor 4 is removed from the 4 in the numerator and the 16 in the denominator, leaving 1 and 4 respectively.

The factor 5 is removed from the 5 in the denominator and the 10 in the numerator, leaving 1 and 2 respectively.

The factor 2 can now be removed from the 2 in the numerator and the 4 in the denominator, leaving 1 and 2 respectively.

Since all factors in common have been removed, the two numerators are multiplied together and the two denominators are multiplied together resulting in the final result of $\frac{1}{2}$.

Rule: $\frac{a}{b}\cdot\frac{c}{d}=\frac{a\cdot c}{b\cdot d}$ if $b\neq 0$ and $d\neq 0$ (Remember, division by 0 is undefined.)

TRY:

$\frac{2}{3}\cdot\frac{9}{16}=$

$\frac{-3}{4}\cdot\frac{1}{2}\cdot\frac{-8}{9}=$

$\frac{3}{5}\cdot\frac{20}{21}=$

$6\cdot\frac{7}{12}=$ (remember to write 6 as $\frac{6}{1}$)

What is $\frac{3}{5}$ of $\frac{4}{9}$? (HINT: of means multiply)

TRY these as fast as you can.

1) $\frac{1}{3} \bullet \frac{1}{3}$ _____

2) $\frac{2}{5} \bullet \frac{3}{5}$ _____

3) $\frac{3}{8} \bullet \frac{4}{8}$ _____

4) $\frac{5}{6} \bullet \frac{1}{6}$ _____

5) $\frac{2}{7} \bullet \frac{3}{7}$ _____

6) $\frac{1}{4} \bullet \frac{3}{4}$ _____

7) $\frac{5}{8} \bullet \frac{3}{8}$ _____

8) $-\frac{7}{8} \bullet \frac{1}{8}$ _____

9) $\frac{7}{11} \bullet \frac{11}{15}$ _____

10) $\frac{2}{7} \bullet \frac{7}{8}$ _____

11) $\frac{1}{5} \bullet \frac{1}{5}$ _____

12) $-\frac{4}{7} \bullet \frac{2}{7}$ _____

13) $\frac{1}{6} \bullet \frac{3}{5}$ _____

14) $-\frac{1}{3} \bullet \frac{1}{3}$ _____

15) $-\frac{2}{7} \bullet \frac{4}{7}$ _____

16) $\frac{1}{6} \bullet \left(-\frac{4}{7}\right)$ _____

17) $-\frac{5}{11} \bullet \frac{2}{3}$ _____

18) $\frac{2}{9} \bullet \left(-\frac{5}{9}\right)$ _____

19) $\left(-\frac{6}{13}\right) \bullet \frac{5}{6}$ _____

20) $\left(-\frac{3}{8}\right) \bullet \left(-\frac{1}{8}\right)$ _____

21) $\frac{5}{11} \bullet \frac{3}{7}$ _____

22) $\frac{2}{5} \bullet \frac{4}{5}$ _____

23) $\frac{5}{9} \bullet \left(-\frac{2}{9}\right)$ _____

24) $\left(-\frac{6}{7}\right) \bullet \frac{2}{7}$ _____

25) $\left(-\frac{1}{5}\right) \bullet \left(-\frac{1}{5}\right)$ _____

26) $\left(-\frac{3}{4}\right) \bullet \frac{1}{4}$ _____

27) $\frac{3}{8} \bullet \left(-\frac{4}{9}\right)$ _____

28) $\frac{5}{13} \bullet \frac{13}{15}$ _____

How did you do?