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**Example:**

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This means  $\frac{1}{m} \cdot \frac{1}{n}$  is a number so that  $nm \cdot \frac{1}{m} \cdot \frac{1}{n} = 1$

Furthermore, a number that when multiplied by  $nm$  produces 1 is:  $\frac{1}{mn}$

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**Conclusion:**  $\frac{1}{m} \cdot \frac{1}{n} = \frac{1}{mn}$

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We found that:

$$\frac{1}{m} \cdot \frac{1}{n} = \frac{1}{mn}$$

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We can rearrange this because multiplication is commutative.

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**Conclusion:** If we multiply two fractions  $\frac{a}{m}, \frac{b}{n}$  we get:

$$\frac{a}{m} \cdot \frac{b}{n} = \frac{a \cdot b}{m \cdot n}$$

In other words, to multiply two fractions, we multiply across the top and across the bottom

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**Example:**

$$\frac{2}{5} \cdot \frac{4}{3} = \frac{2 \cdot 4}{5 \cdot 3}$$

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