Dividing on Fractions

There are 3 simple steps to divide fractions:

Turn the second fraction (the one you want to divide by) upside down (this is now a reciprocal.

Multiply the first fraction by that reciprocal

Simplify the fraction (if needed)

Example

$$\frac{1}{2}$$
 $\frac{1}{6}$

Turn the second fraction upside down (it becomes a reciprocal):

$$\frac{1}{6}$$
 becomes $\frac{6}{1}$

Multiply the first fraction by that reciprocal:

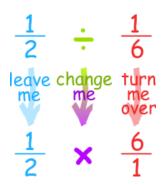
(multiply tops ...)

$$\frac{1}{2} \times \frac{6}{1} = \frac{1 \times 6}{2 \times 1} = \frac{6}{2}$$

(... multiply bottoms)

Simplify the fraction:

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



20 divided by 5 is asking "how many 5s in 20?" (=4) and so:

$$\frac{1}{2} \div \frac{1}{6}$$
 is really asking "how many $\frac{1}{6}$ s in $\frac{1}{2}$?"

Now look at the pizzas below how many " $\frac{1}{6}$ slices" fit into a " $\frac{1}{2}$ slice"?



Answer: 3

So now you can see why $\frac{1}{2} \div \frac{1}{6} = 3$

In other words "I have half a pizza, if I divide it into one-sixth slices, how many slices is that?"

Example

$$\frac{1}{8} \div \frac{1}{4}$$

Turn the second fraction upside down (the reciprocal):

$$\frac{1}{4}$$
 becomes $\frac{4}{1}$

Multiply the first fraction by that reciprocal:

$$\frac{1}{8} \times \frac{4}{1} = \frac{1 \times 4}{8 \times 1} = \frac{4}{8}$$

Simplify the fraction:

$$\frac{4}{8} = \frac{1}{2}$$