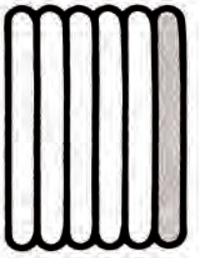
MULTIPLYING EXPLAINED

6



Here is a bundle of sticks.

How many sticks are there? ____

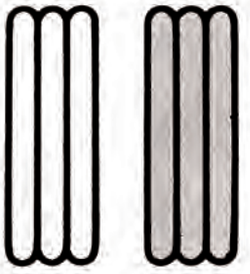
This stick is one of six.

"one of six" $\longrightarrow \frac{1}{\quad}$

$\frac{1}{6}$

So this stick is $\frac{1}{6}$ of the whole bundle.

$\frac{1}{2}$



We split the bundle into two parts.

This part is one of two.

"one of two" $\longrightarrow \frac{1}{2}$

So this part is $\frac{1}{2}$ of the whole bundle.

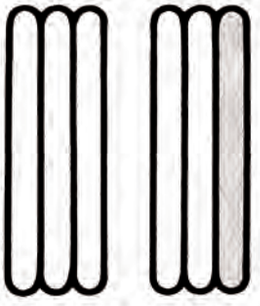
3

$\frac{1}{3}$

$\frac{1}{6}$

$\frac{1}{2}$

How many sticks are there in $\frac{1}{2}$ of the bundle? ____



This stick is one of three sticks in $\frac{1}{2}$ of the bundle.

"one of three" $\longrightarrow \frac{1}{\quad}$

So this stick is $\frac{1}{3}$ of $\frac{1}{2}$ of the bundle.

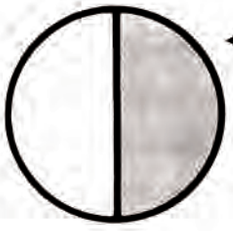
It is also $\frac{\quad}{6}$ of the whole bundle.

So $\frac{1}{3}$ of $\frac{1}{\quad}$ is the same as $\frac{1}{6}$.

$\frac{1}{6}$

Here is a short way to get the same answer.

Multiply numerator x numerator and denominator x denominator $\frac{1 \times 1}{3 \times 2} = \frac{\quad}{6}$



Here is one of two parts of a circle.

$\frac{1}{2}$

It is $\frac{1}{2}$ / $\frac{1}{3}$ of the circle.

Here is the same $\frac{1}{2}$ cut into two parts.

This is one of two parts of

$\frac{1}{2}$ of a circle.

$\frac{1}{2}$

It is $\frac{1}{2}$ of $\frac{1}{-}$.

Now the circle has four parts.

$\frac{1}{4}$

This is one of four parts.

It is $\frac{1}{-}$ of the whole circle.

yes

Is it also $\frac{1}{2}$ of $\frac{1}{2}$ of the circle? yes / no

$\frac{1}{2}$

So $\frac{1}{2}$ of $\frac{1}{-}$ is the same as $\frac{1}{4}$.

$\frac{1}{4}$

We could have multiplied

numerator x numerator $\frac{1 \times 1}{2 \times 2} = \frac{1}{-}$
and denominator x denominator

We multiplied (check the correct answer):

c.

_____ a. only the numerators.
_____ b. only the denominators.
_____ c. both the numerators and the denominators.

$\frac{1}{2}$ of $\frac{1}{2} = \frac{?}{?}$

We find the answer by multiplying:

$\frac{1}{4}$

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

$\frac{1}{3}$ of $\frac{1}{3} = \frac{?}{?}$

Multiply:

$\frac{1}{9}$

$$\frac{1 \times 1}{3 \times 3} = \text{——}$$

We write only one multiplication sign:

$$\frac{2}{3} \times \frac{1}{2} \text{ means } \frac{2 \times 1}{3 \times 2}$$

Multiply:

$\frac{2}{6}$

$$\frac{2}{3} \times \frac{1}{2} = \frac{}{6}$$

$\frac{3}{8}$

$$\frac{1}{2} \times \frac{3}{4} = \frac{3}{\quad}$$

$\frac{3}{10}$

$$\frac{3}{5} \times \frac{1}{2} = \text{——}$$

$\frac{2}{9}$

$$\frac{2}{3} \times \frac{1}{3} = \text{——}$$

MULTIPLYING FRACTIONS, USING "OF" TO INDICATE MULTIPLICATION

$\frac{1}{12}$	$\frac{1}{3} \times \frac{1}{4} =$ ____
$\frac{1}{12}$	$\frac{1}{3}$ of $\frac{1}{4} =$ ____
$\frac{3}{10}$	$\frac{3}{5} \times \frac{1}{2} =$ ____
$\frac{1}{15}$	$\frac{1}{3} \times \frac{1}{5} =$ ____
$\frac{2}{15}$	$\frac{1}{5} \times \frac{2}{3} =$ ____
$\frac{1}{12}$	$\frac{1}{2}$ of $\frac{1}{6} =$ ____
$\frac{4}{15}$	$\frac{1}{3} \times \frac{4}{5} =$ ____
$\frac{5}{12}$	$\frac{5}{6} \times \frac{1}{2} =$ ____
$\frac{1}{18}$	$\frac{1}{3} \times \frac{1}{6} =$ ____
$\frac{3}{20}$	$\frac{1}{5} \times \frac{3}{4} =$ ____