

Luna's Space Adventure

Name _____

Grade 5 · Multiplying fractions · 5.NF.B.4

Date _____



Astronaut Luna is exploring a far-off corner of space. Solve each problem to help Luna's mission go smoothly!

A fraction of a number $\frac{2}{3}$ of 12 is $2 \times 12 \div 3$.

$$\frac{1}{3} \times 12 = \boxed{}$$

$$\frac{2}{3} \times 15 = \boxed{}$$

$$\frac{1}{5} \times 25 = \boxed{}$$

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

Fraction times fraction Multiply the tops, multiply the bottoms, then simplify.

$$\frac{2}{5} \times \frac{1}{2} = \frac{\boxed{}}{\boxed{}}$$

$$\frac{1}{2} \times \frac{1}{4} = \frac{\boxed{}}{\boxed{}}$$

$$\frac{1}{10} \times \frac{3}{8} = \frac{\boxed{}}{\boxed{}}$$

$$\frac{5}{6} \times \frac{1}{2} = \frac{\boxed{}}{\boxed{}}$$

$$\frac{1}{5} \times \frac{2}{3} = \frac{\boxed{}}{\boxed{}}$$

$$\frac{1}{6} \times \frac{5}{8} = \frac{\boxed{}}{\boxed{}}$$

Area with fractions Area = length $\times$ width.

A rectangle is $\frac{1}{2}$ m by $\frac{1}{3}$ m. Its area is _____

A rectangle is $\frac{3}{4}$ m by $\frac{3}{4}$ m. Its area is _____

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ANSWER KEY



Astronaut Luna is exploring a far-off corner of space. Solve each problem to help Luna's mission go smoothly!

A fraction of a number $2/3$ of 12 is $2 \times 12 \div 3$.

$$\frac{1}{3} \times 12 = \boxed{4}$$

$$\frac{2}{3} \times 15 = \boxed{10}$$

$$\frac{1}{5} \times 25 = \boxed{5}$$

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

Fraction times fraction Multiply the tops, multiply the bottoms, then simplify.

$$\frac{2}{5} \times \frac{1}{2} = \boxed{\frac{1}{5}}$$

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

$$\frac{1}{10} \times \frac{3}{8} = \boxed{\frac{3}{80}}$$

$$\frac{5}{6} \times \frac{1}{2} = \boxed{\frac{5}{12}}$$

$$\frac{1}{5} \times \frac{2}{3} = \boxed{\frac{2}{15}}$$

$$\frac{1}{6} \times \frac{5}{8} = \boxed{\frac{5}{48}}$$

Area with fractions Area = length $\times$ width.

A rectangle is $1/2$ m by $1/3$ m. Its area is

$1/6$ sq m

A rectangle is $3/4$ m by $3/4$ m. Its area is

$9/16$ sq m

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GUIDE

① What this sheet practises

Multiplying a whole number or a fraction by a fraction, and finding the area of a rectangle with fraction side lengths.

② A problem from the sheet, worked out

Fraction times fraction Multiply the tops, multiply the bottoms, then simplify.

$$\frac{2}{5} \times \frac{1}{2} = \frac{\boxed{1}}{\boxed{5}}$$

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

$$\frac{1}{10} \times \frac{3}{8} = \frac{\boxed{3}}{\boxed{80}}$$

$$\frac{5}{6} \times \frac{1}{2} = \frac{\boxed{5}}{\boxed{12}}$$

$$\frac{1}{5} \times \frac{2}{3} = \frac{\boxed{2}}{\boxed{15}}$$

$$\frac{1}{6} \times \frac{5}{8} = \frac{\boxed{5}}{\boxed{48}}$$

How: Multiply the tops, then the bottoms, then simplify: $\frac{2}{3} \times \frac{1}{4} = \frac{2}{12} = \frac{1}{6}$. A whole number works the same way: $\frac{2}{3} \times 12 = \frac{24}{3} = 8$.

③ Words to know

product the answer to $\times$

of means multiply: $\frac{1}{2}$ of 8 is $\frac{1}{2} \times 8$

simplify divide the top and bottom by the same number

area length $\times$ width, in square units

④ Watch for

- Finding a common denominator first, as if adding.
- Multiplying the whole number into the top and the bottom: $\frac{1}{2} \times 4$ is 2, not $\frac{4}{8}$.
- Expecting a bigger answer: multiplying by a fraction less than 1 gives less.

⑤ Where it fits

BEFORE

4.NF.B.4

Multiply a fraction by a whole number.

THIS SHEET

5.NF.B.4

Multiply a fraction or whole number by a fraction.

NEXT

5.NF.B.5

Understand multiplying as scaling something up or down.

⑥ Helping at home

Fold paper in thirds one way and fourths the other. Shade 2 thirds, then 1 fourth across: the overlap is 2 of 12 parts, so $\frac{2}{3} \times \frac{1}{4} = \frac{1}{6}$.