

## Multiplying Fractions

$$\frac{2}{4} \times \frac{3}{6}$$

$$\frac{2}{4} \times \frac{3}{6} = \frac{6}{24}$$

Multiply the numerators. Multiply the denominators.

$$\frac{6}{24} = \frac{1}{4}$$

Simplify the fraction by dividing the numerator and denominator by their largest common factor.



A

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

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

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

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

$$5 \quad \frac{1}{3} \text{ of } \frac{3}{5} =$$

$$6 \quad \frac{9}{10} \text{ of } \frac{1}{3} =$$

Remember, still multiply for "of"

B

Be careful - the answer has already been simplified

7

$$\frac{\square}{5} \times \frac{3}{4} = \frac{9}{20}$$

8

$$\frac{2}{5} \times \frac{1}{\square} = \frac{1}{10}$$

9

Half the children in a class are boys. A quarter of the boys in the class wear glasses.  
What fraction of the class are boys that wear glasses?



10

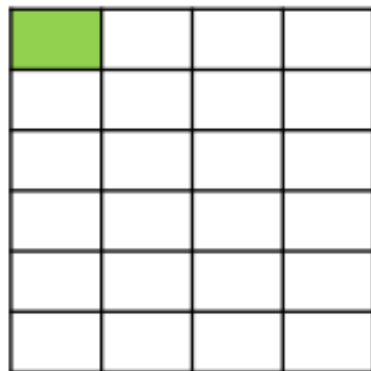
Tom was given some money for his birthday.  
He spent three quarters of his money at the cinema.  
He spent a third of his remaining money on a computer game.  
What fraction of his birthday money was spent on the game?



Which of these questions can you answer?

The shaded square in the grid below is the answer to a multiplying fractions question.

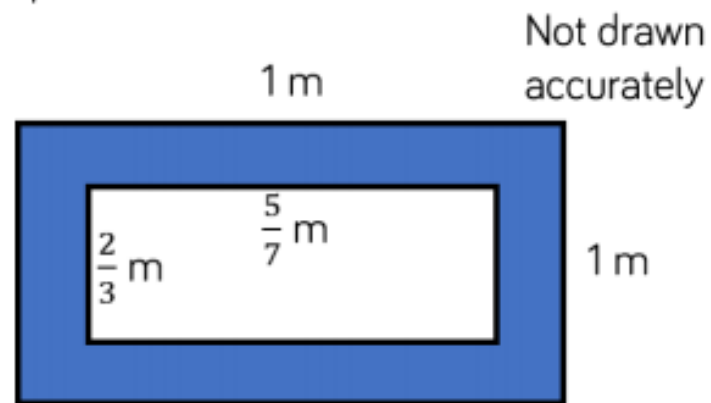
What was the question?



How many ways can you complete the missing digits?

$$\begin{array}{c} \text{purple spider} \\ \frac{\quad}{\quad} \end{array} \times \frac{3}{\quad} = \frac{6}{12} \\
 \begin{array}{c} \text{brown spider} \\ \frac{\quad}{\quad} \end{array} \times \frac{3}{\quad} = \frac{6}{12} \\
 \begin{array}{c} \text{blue spider} \\ \frac{\quad}{\quad} \end{array} \times \frac{3}{\quad} = \frac{6}{12} \\
 \begin{array}{c} \text{green spider} \\ \frac{\quad}{\quad} \end{array} \times \frac{3}{\quad} = \frac{6}{12}$$

Find the area of the shaded part of the shape.



Alex says,



$\frac{1}{4} \times \frac{1}{2}$  is the same as  $\frac{1}{2}$  of a quarter.

Do you agree?

Explain why.

## Answers

A

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

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

$$3 \quad \frac{2}{3} \times \frac{1}{4} = \frac{2}{12} = \frac{1}{6}$$

$$4 \quad \frac{3}{4} \times \frac{1}{4} = \frac{3}{16}$$

$$5 \quad \frac{1}{3} \text{ of } \frac{3}{5} = \frac{3}{15} = \frac{1}{5}$$

$$6 \quad \frac{9}{10} \text{ of } \frac{1}{3} = \frac{9}{30} = \frac{3}{10}$$

B

$$7 \quad \frac{3}{5} \times \frac{3}{4} = \frac{9}{20}$$

$$8 \quad \frac{2}{5} \times \frac{1}{20} = \frac{1}{10}$$

- 9 Half the children in a class are boys. A quarter of the boys in the class wear glasses.  
What fraction of the class are boys that wear glasses?

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



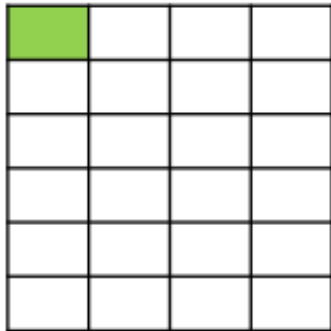
- 10 Tom was given some money for his birthday.  
He spent three quarters of his money at the cinema.  
He spent a third of his remaining money on a computer game.  
What fraction of his birthday money was spent on the game?

$$\frac{1}{4} \text{ of money remaining, so } \frac{1}{4} \times \frac{1}{3} = \frac{1}{12}$$



The shaded square in the grid below is the answer to a multiplying fractions question.

What was the question?



How many ways can you complete the missing digits?

$$\begin{array}{c} \text{purple spider} \\ \hline \end{array} \times \begin{array}{c} 3 \\ \hline \end{array} = \frac{6}{\begin{array}{c} 12 \\ \hline \end{array}} \\
 \begin{array}{c} \text{brown spider} \\ \hline \end{array} \times \begin{array}{c} \text{blue spider} \\ \hline \end{array} = \frac{6}{\begin{array}{c} 12 \\ \hline \end{array}} \\
 = \frac{\begin{array}{c} \text{green spider} \\ \hline \end{array}}{2}$$

$$\frac{1}{6} \times \frac{1}{4}$$

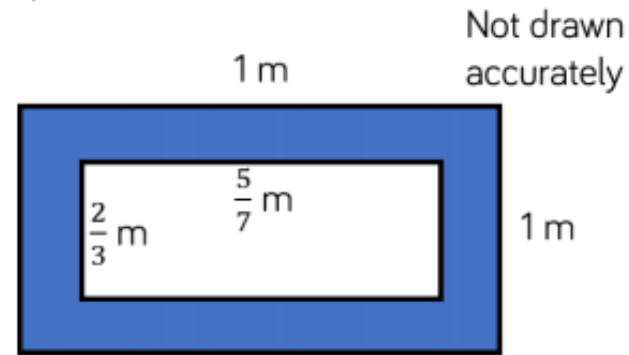
Possible answers:

$$\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2}$$

$$\frac{2}{2} \times \frac{3}{6} = \frac{6}{12} = \frac{1}{2}$$

Children could also use improper fractions.

Find the area of the shaded part of the shape.



$$1 \times 1 = 1$$

$$\frac{2}{3} \times \frac{5}{7} = \frac{10}{21}$$

$$1 - \frac{10}{21} = \frac{11}{21}$$

The shaded area is  $\frac{11}{21} \text{ m}^2$ .

Alex says,



$\frac{1}{4} \times \frac{1}{2}$  is the same as  $\frac{1}{2}$  of a quarter.

Do you agree?

Explain why.

Alex is correct. Multiplication is commutative so

$$\frac{1}{4} \times \frac{1}{2} \text{ is the same}$$

as  $\frac{1}{2}$  of a quarter or

$$\frac{1}{4} \text{ of a half.}$$