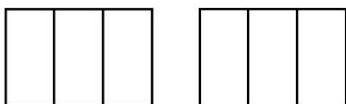# Check Your Answers on Dividing Fractions!

1. 4 $\left(\dfrac{4}{5} \div \dfrac{1}{5} = 4\right)$

The rectangle is divided into 5 congruent sections, each section representing $\dfrac{1}{5}$ of the rectangle. The shaded area is therefore $\dfrac{4}{5}$ of the rectangle. How many fifths are there in the shaded region? Easy to see that there are 4!

2. 6 $\left(2 \div \dfrac{1}{3} = 6\right)$

There are 2 rectangles (2 "wholes"), each divided into 3 congruent sections with each section representing $\dfrac{1}{3}$. So how many are thirds are there?

3. $\dfrac{1}{50}$ $\left(\dfrac{1}{10} \div 5 = \dfrac{1}{50}\right)$

Imagine that Mr. Clark had 100 pencils in his supply. If he gave out $\dfrac{1}{10}$ of that supply, then he gave out 10 pencils. Five students received those 10 pencils so each student would have received 2 pencils. 2 pencils out of 100 pencils ($\dfrac{2}{100}$) simplifies to $\dfrac{1}{50}$.

4. $\dfrac{20}{21}$ $\left(\dfrac{5}{7} \div \dfrac{3}{4} = \dfrac{5}{7} \cdot \dfrac{4}{3} = \dfrac{20}{21}\right)$

It is not possible to picture this so the process is now important! Division is often redefined as "multiplying by the reciprocal." The reciprocal flips the fraction (interchange numerator and denominator). To divide fractions, change the operation to multiplication and "flip" the divisor.

5. 10 $\left(8 \div \dfrac{4}{5} = \dfrac{8}{1} \cdot \dfrac{5}{4} = \dfrac{40}{4} = 10\right)$

Place the whole number over 1 and continue to divide by multiplying by the reciprocal of the divisor. Don't forget to simplify your answer!

6. $\dfrac{1}{9}$ $\left(\dfrac{2}{3} \div 6 = \dfrac{2}{3} \div \dfrac{6}{1} = \dfrac{2}{3} \cdot \dfrac{1}{6} = \dfrac{2}{18} = \dfrac{1}{9}\right)$

It is possible to simplify before multiplying: $\left(\dfrac{\cancel{2}^{1}}{3} \cdot \dfrac{1}{\cancel{6}_{3}} = \dfrac{1}{9}\right)$

7. $\dfrac{3}{10}$ $\left(\dfrac{\frac{3}{5}}{2} = \dfrac{3}{5} \div 2 = \dfrac{3}{5} \div \dfrac{2}{1} = \dfrac{3}{5} \cdot \dfrac{1}{2} = \dfrac{3}{10}\right)$

The fraction bar is a division symbol. Rewrite the complex fraction as the division of the numerator by the denominator.

8. $\dfrac{9}{5}$ $\left(\dfrac{2}{3} \div \dfrac{10}{27} = \dfrac{2}{3} \cdot \dfrac{27}{10} = \dfrac{54}{30} = \dfrac{9}{5}\right)$

It is often easier to simplify before multiplying! Look for common factors between numerators and denominators. $\left(\dfrac{\cancel{2}^{1}}{\cancel{3}_{1}} \cdot \dfrac{\cancel{27}^{9}}{\cancel{10}_{5}} = \dfrac{9}{5}\right)$

9. $1\dfrac{1}{3}$ $\left(\dfrac{16}{21} \div \dfrac{4}{7} = \dfrac{16}{21} \cdot \dfrac{7}{4} = \dfrac{112}{84} = \dfrac{4}{3}\right)$

Definitely easier to simplify before multiplying! $\left(\dfrac{\cancel{16}^{4}}{\cancel{21}_{3}} \cdot \dfrac{\cancel{7}^{1}}{\cancel{4}_{1}} = \dfrac{4}{3} = 1\dfrac{1}{3}\right)$

10. $1\dfrac{13}{14}$ $\left(\dfrac{\frac{3}{7}}{\frac{2}{9}} = \dfrac{3}{7} \div \dfrac{2}{9} = \dfrac{3}{7} \cdot \dfrac{9}{2} = \dfrac{27}{14} = 1\dfrac{13}{14}\right)$

Remember that the fraction bar is a division symbol. Simplify the complex fraction by rewriting as the numerator divided by the denominator.

Perfect score? Yes! You've got this!! You're ready to move on to the next section!!!