

Dividing a Whole Number by a Fraction

To divide a whole number by a fraction, you can multiply the whole number by the reciprocal of the fraction. The reciprocal of a number has the numerator and the denominator reversed. The product of a number and its reciprocal is 1.

Number	×	Reciprocal	=	Product
3	×	$\frac{1}{3}$	=	1
$\frac{1}{8}$	×	$\frac{8}{1}$	=	1
$\frac{2}{3}$	×	$\frac{3}{2}$	=	1

Find $14 \div \frac{4}{7}$.

Step 1

Rewrite the division as multiplication using the reciprocal of the divisor.

The reciprocal of $\frac{4}{7}$ is $\frac{7}{4}$.

$$14 \div \frac{4}{7} = 14 \times \frac{7}{4}$$

Step 2

Divide out common factors if possible. Then multiply.

$$\frac{\cancel{14}^7}{\cancel{1}^1} \times \frac{\cancel{7}^7}{\cancel{4}_2} = \frac{49}{2}$$

Step 3

If your answer is an improper fraction, change it to a mixed number.

$$\frac{49}{2} = 24\frac{1}{2}$$

Find the reciprocal of each fraction or whole number.

1. $\frac{5}{7}$ _____

2. 11 _____

3. $\frac{9}{2}$ _____

Find each quotient. Simplify if possible.

4. $12 \div \frac{4}{5}$ _____

5. $2 \div \frac{1}{4}$ _____

6. $16 \div \frac{8}{10}$ _____

7. $24 \div \frac{3}{4}$ _____

8. $18 \div \frac{8}{9}$ _____

9. $25 \div \frac{10}{11}$ _____

10. $36 \div \frac{8}{9}$ _____

11. $42 \div \frac{7}{8}$ _____

12. $40 \div \frac{4}{5}$ _____

13. Karolyn makes rolls for a friend's dinner party. She uses 3 lb of butter. Each stick of butter weighs $\frac{1}{4}$ lb. How many sticks of butter does Karolyn need to make her rolls?
- _____