

Date: \_\_\_\_\_

KEY

### 6.2 Notes: Dividing a Fraction and a Whole

Use the diagrams to model the division of a fraction by a whole number:

$$\frac{2}{3} \div 2$$

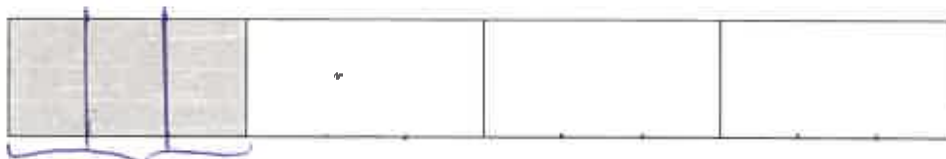


THIS IS  $\frac{2}{3}$ . DIVIDE THIS BY 2.



WHEN DIVIDED INTO 2 PIECES, EACH PIECE IS  $\frac{1}{3}$ .

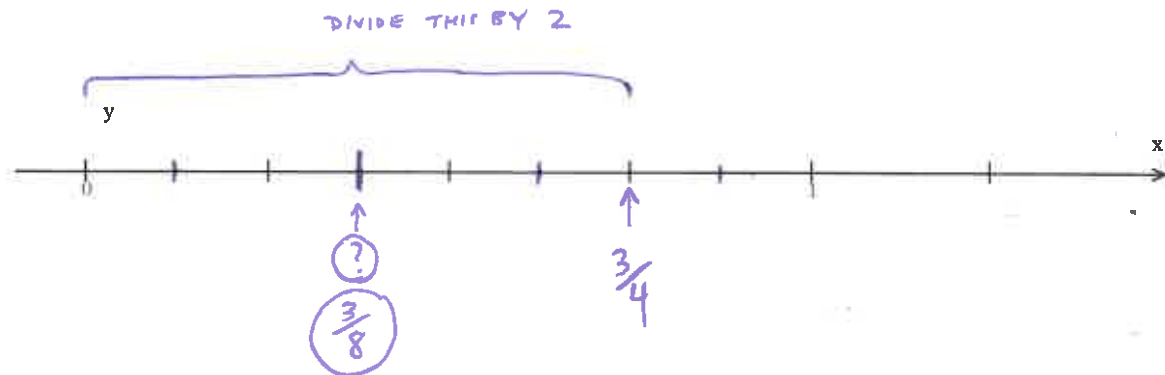
$$\frac{1}{4} \div 3$$



DIVIDE THIS BY 3

Division can also be modeled with a number line diagram:

$$\frac{3}{4} \div 2$$



Division without a diagram: MULTIPLY BY THE RECIPROCAL

$$\begin{aligned} \frac{2}{3} \div 2 &= \frac{2}{6} \\ &= \boxed{\frac{1}{3}} \\ &= \frac{2}{3} \times \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \frac{1}{4} \div 3 &= \boxed{\frac{1}{12}} \\ &= \frac{1}{4} \times \frac{1}{3} \end{aligned}$$

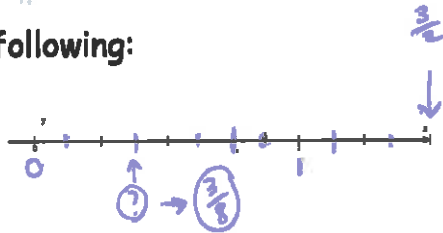
• Use a denominator that is the product of the \_\_\_\_\_ and \_\_\_\_\_

Divide the following:

$$\frac{3}{2} \div 4$$

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

$$= \boxed{\frac{3}{8}}$$



$$\frac{7}{8} \div 3$$

$$= \frac{7}{8} \times \frac{1}{3}$$

$$= \boxed{\frac{7}{24}}$$

$$\frac{2}{5} \div 7$$

$$= \frac{2}{5} \times \frac{1}{7}$$

$$= \boxed{\frac{2}{35}}$$

$$\frac{1}{2} \div 2$$

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

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

Develop a shortcut that can be used for dividing a fraction by a whole.

- ① KEEP THE NUMERATOR.
- ② MULTIPLY THE WHOLE INTO THE DENOMINATOR.
- ③ SIMPLIFY (REDUCE)

1. Kevin can eat  $\frac{3}{4}$  of a pizza in 2 hours. How much pizza can he eat in 1 hour?

$$x = \frac{3}{4} \div 2$$

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

$$x = \boxed{\frac{3}{8}}$$

2. Luke has  $\frac{2}{3}$  of a chocolate bar left, which he gives to 5 hungry friends to share. If they share it equally, what fraction of the whole chocolate bar does each receive?

$$x = \frac{2}{3} \div 5$$

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

$$x = \boxed{\frac{2}{15}}$$