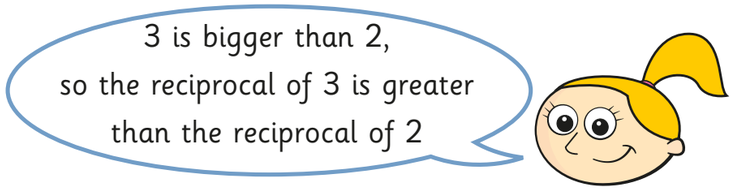
Understand and use the reciprocal

1 Match the numbers and fractions to their reciprocals.

3	15
$\frac{3}{4}$	$\frac{1}{3}$
$\frac{1}{15}$	$\frac{4}{3}$
2	$\frac{x}{2}$
$\frac{1}{x}$	$\frac{1}{2}$
$\frac{2}{x}$	x

2



Is Eva correct? _____

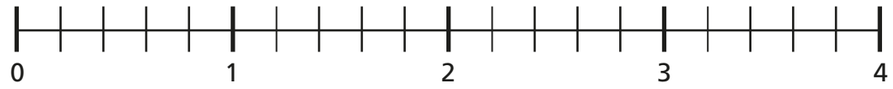
Explain your reasoning.

_____

_____

_____

3 Work out the pairs of calculations. Use the number line to help you.



a) $1 \div \frac{1}{5} =$ ☐

$1 \times 5 =$ ☐

b) $2 \div \frac{1}{5} =$ ☐

$2 \times 5 =$ ☐

c) $3 \div \frac{1}{5} =$ ☐

$3 \times 5 =$ ☐

d) $4 \div \frac{1}{5} =$ ☐

$4 \times 5 =$ ☐

Complete the sentence.

_____ by a fraction is the same as _____ by its reciprocal.

4 Complete the calculations.

a) $6 \div \frac{1}{5} =$ ☐

b) $7 \div \frac{1}{5} =$ ☐

c) $5 \div \frac{1}{4} =$ ☐

d) $8 \div \frac{1}{4} =$ ☐

5

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

Tommy has written these calculations using the fraction wall.

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

Discuss Tommy's method with a partner. What has he done?

Use Tommy's method to complete the calculations.

a) $3 \div \frac{1}{4} = 3 \times \square = \square$

b) $3 \div \frac{3}{4} = 3 \times \square \div \square = \square$

c) $3 \div \frac{1}{8} = 3 \times \square = \square$

d) $3 \div \frac{3}{8} = 3 \times \square \div \square = \square$

e) $6 \div \frac{3}{4} = \square$

f) $9 \div \frac{2}{3} = \square$

g) $2 \div \frac{2}{5} = \square$

h) $2 \div \frac{4}{5} = \square$

6 Use the fraction wall to calculate $2 \div \frac{4}{5}$

2									
1					1				
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$
$\frac{4}{5}$					$\frac{4}{5}$				$\frac{2}{5}$

$2 \div \frac{4}{5} = \square$

Discuss your answer with a partner.

7 Complete the calculations

a) $3 \div \frac{1}{3} = \square$

b) $3 \div \frac{2}{3} = \square$

c) $\frac{1}{2} \div \frac{1}{3} = \square$

d) $\frac{1}{2} \div \frac{2}{3} = \square$

e) $3 \div \frac{1}{3} = \square$

f) $3 \div \frac{2}{3} = \square$

Explain how you could use fractions to work out $0.5 \div 0.125$