Divide a fraction by a unit fraction

1 Use the bar models to answer the questions and complete the calculations.
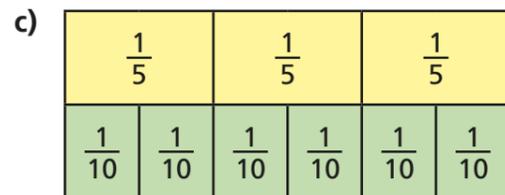
a)

$\frac{3}{4}$		
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
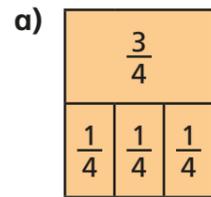
How many quarters are there in three-quarters? ☐

$\frac{3}{4} \div \frac{1}{4} = $ ☐

b)

$\frac{1}{5}$	
$\frac{1}{10}$	$\frac{1}{10}$
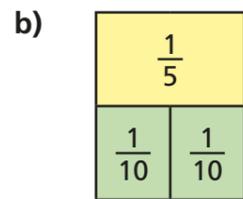
How many tenths are there in one-fifth? ☐

$\frac{1}{5} \div \frac{1}{10} = $ ☐

c)

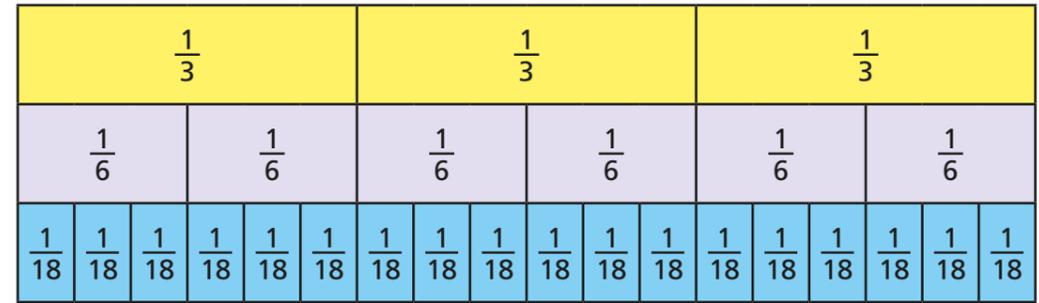| $\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$	
$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$

How many tenths are there in three-fifths? ☐

$\frac{3}{5} \div \frac{1}{10} = $ ☐

2 Use the fraction wall to complete the calculations.

$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$		
$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$
$\frac{1}{18}$	$\frac{1}{18}$	$\frac{1}{18}$	$\frac{1}{18}$	$\frac{1}{18}$	$\frac{1}{18}$	$\frac{1}{18}$	$\frac{1}{18}$	$\frac{1}{18}$ $\frac{1}{18}$ $\frac{1}{18}$ $\frac{1}{18}$ $\frac{1}{18}$ $\frac{1}{18}$ $\frac{1}{18}$ $\frac{1}{18}$ $\frac{1}{18}$

a) $\frac{1}{3} \div \frac{1}{6} = $ ☐

d) $\frac{2}{3} \div \frac{1}{18} = $ ☐

b) $\frac{1}{3} \div \frac{1}{18} = $ ☐

e) $\frac{5}{3} \div \frac{1}{18} = $ ☐

c) $\frac{2}{3} \div \frac{1}{6} = $ ☐

Use the fraction wall, and the fact that $\frac{2}{18} = \frac{1}{9}$, to help you complete the calculations.

f) $\frac{1}{3} \div \frac{1}{9} = $ ☐

g) $\frac{2}{3} \div \frac{1}{9} = $ ☐

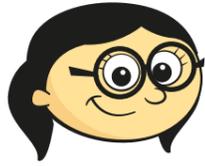**3** Complete the calculations.

Draw diagrams to help you.

a) $\frac{2}{3} \div \frac{1}{6} = $ ☐

b) $\frac{2}{3} \div \frac{1}{12} = $ ☐

c) $\frac{3}{4} \div \frac{1}{12} = $ ☐

4

$\frac{1}{2} \div \frac{1}{8}$ is greater than $\frac{1}{2} \div \frac{1}{4}$

Draw diagrams to show Annie is correct.

5 Write <, > or = to compare the statements.

$\frac{1}{3} \div \frac{1}{12}$ ◯ $\frac{1}{3} \div \frac{1}{18}$

$\frac{1}{3} \div \frac{1}{12}$ ◯ $\frac{1}{4} \div \frac{1}{12}$

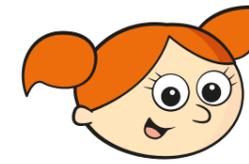$\frac{1}{3} \div \frac{1}{12}$ ◯ $\frac{2}{3} \div \frac{1}{12}$

$\frac{1}{3} \div \frac{1}{12}$ ◯ $\frac{1}{3} \times \frac{1}{12}$

6 Alex divides by unit fractions using equivalent fractions.

Here is Alex's method.

$\frac{2}{3} \div \frac{1}{9}$

$= \frac{6}{9} \div \frac{1}{9}$

$= 6 \div 1$

$= 6$

Use Alex's method to complete the calculations.

a) $\frac{3}{4} \div \frac{1}{8} = \frac{\boxed{}}{8} \div \frac{1}{8} = \boxed{} \div 1 = \boxed{}$

b) $\frac{3}{4} \div \frac{1}{12} = \frac{\boxed{}}{\boxed{}} \div \frac{1}{12} = \boxed{} \div 1 = \boxed{}$

c) $\frac{3}{4} \div \frac{1}{20} = \frac{\boxed{}}{\boxed{}} \div \frac{1}{20} = \boxed{} \div \boxed{} = \boxed{}$

7 Solve the equations.

a) $\frac{1}{15} a = \frac{1}{3}$

$a = \boxed{}$

b) $\frac{1}{10} b = \frac{1}{2}$

$b = \boxed{}$

c) $\frac{1}{33} c = \frac{6}{11}$

$c = \boxed{}$

d) $\frac{1}{12} d = \frac{5}{6}$

$d = \boxed{}$