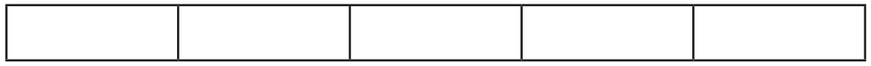
Multiply unit fractions by an integer

1 Complete the calculations.

Use the bar models to help you.

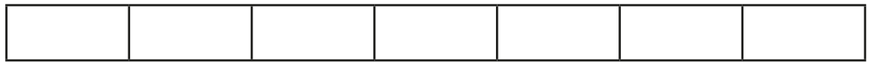
a)



$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$ ☐

$3 \times \frac{1}{5} =$ ☐

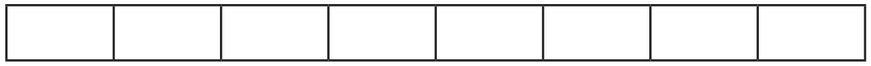
b)



$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} =$ ☐

$4 \times \frac{1}{7} =$ ☐

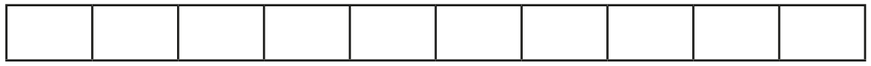
c)



$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} =$ ☐

$5 \times \frac{1}{8} =$ ☐

d)



$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} =$ ☐

$7 \times \frac{1}{10} =$ ☐

2 Complete the multiplications.

a) $3 \times \frac{1}{8} =$ ☐

b) $3 \times \frac{1}{10} =$ ☐

c) $\frac{1}{8} \times 5 =$ ☐

d) $9 \times \frac{1}{10} =$ ☐

e) $\frac{1}{5} \times 4 =$ ☐

f) $\frac{1}{9} \times 8 =$ ☐

g) $8 \times \frac{1}{11} =$ ☐

h) $\frac{1}{11} \times 10 =$ ☐

3 Match the addition to the equivalent multiplication.

$\frac{1}{3} + \frac{1}{3}$	$2 \times \frac{1}{5}$
$\frac{1}{5} + \frac{1}{5} + \frac{1}{5}$	$\frac{1}{4} \times 3$
$\frac{1}{5} + \frac{1}{5}$	$3 \times \frac{1}{5}$
$\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$	$2 \times \frac{1}{3}$

4 A pizza is cut into sixths.

Jack eats five of the slices.

Write a multiplication to represent this.

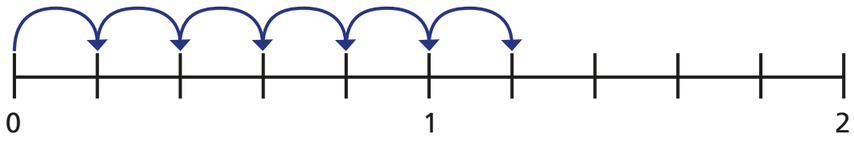
$\square \times \square = \square$

5 Complete the multiplications.

Use the number lines to help you.

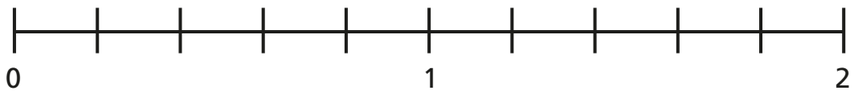
Give each answer as an improper fraction and as a mixed number.

a)



$6 \times \frac{1}{5} = \square = \square$

b)



$9 \times \frac{1}{5} = \square = \square$

6 Complete the multiplications.

a) $11 \times \frac{1}{10} = \square = \square$

b) $11 \times \frac{1}{9} = \square = \square$

c) $\frac{1}{8} \times 11 = \square = \square$

d) $11 \times \frac{1}{7} = \square = \square$

e) $11 \times \frac{1}{6} = \square = \square$

What do you notice?

Does this pattern continue?

7 Complete the calculations.

a) $\square \times \frac{1}{3} = \frac{2}{3}$

b) $\square \times \frac{1}{3} = 1$

c) $\square \times \frac{1}{7} = 1$

d) $\frac{1}{7} \times \square = 1\frac{3}{7}$

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

f) $\square \times \frac{1}{2} = 3\frac{1}{2}$

g) $\square \times \frac{1}{3} = 3\frac{1}{3}$

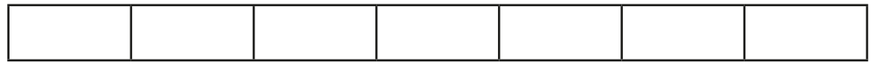
h) $\frac{1}{4} \times \square = 3\frac{1}{4}$

Multiply non-unit fractions by an integer

1 Complete the calculations.

Use the bar models to help you.

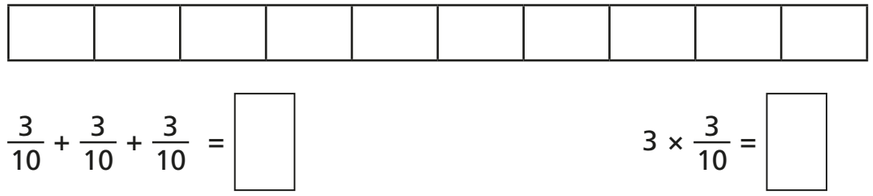
a)



$\frac{2}{7} + \frac{2}{7} + \frac{2}{7} =$ ☐

$3 \times \frac{2}{7} =$ ☐

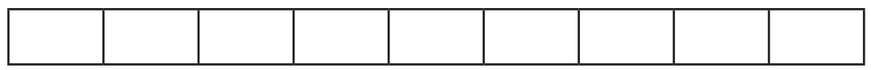
b)



$\frac{3}{10} + \frac{3}{10} + \frac{3}{10} =$ ☐

$3 \times \frac{3}{10} =$ ☐

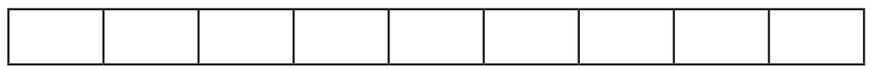
c)



$\frac{2}{9} + \frac{2}{9} + \frac{2}{9} + \frac{2}{9} =$ ☐

$4 \times \frac{2}{9} =$ ☐

d)



$\frac{4}{9} + \frac{4}{9} =$ ☐

$2 \times \frac{4}{9} =$ ☐

What do you notice about parts c) and d)? Talk to a partner.

2 Complete the multiplications.

a) $2 \times \frac{3}{7} =$ ☐

b) $3 \times \frac{3}{11} =$ ☐

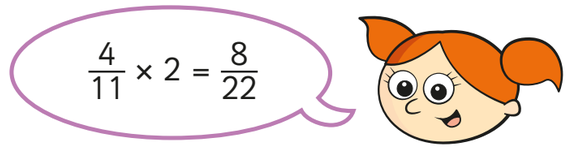
c) $\frac{2}{11} \times 4 =$ ☐

d) $5 \times \frac{2}{11} =$ ☐

e) $\frac{2}{15} \times 7 =$ ☐

f) $\frac{7}{15} \times 2 =$ ☐

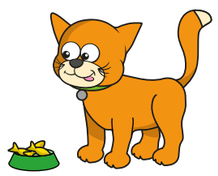
3



Explain the mistake that Alex has made.

4 A cat eats $\frac{2}{15}$ of a bag of biscuits a day.

What fraction of the bag does the cat eat in 4 days?



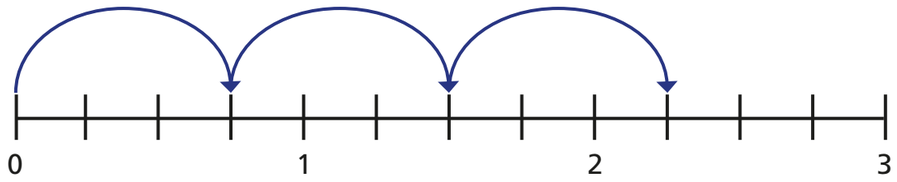
The cat eats ☐ of the bag in 4 days.

5 Complete the multiplications.

Use the number lines to help you.

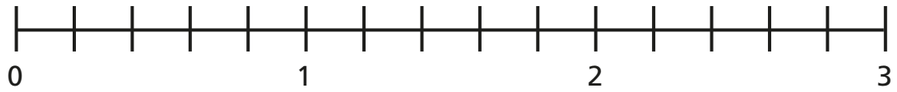
Give each answer as an improper fraction and as a mixed number.

a)



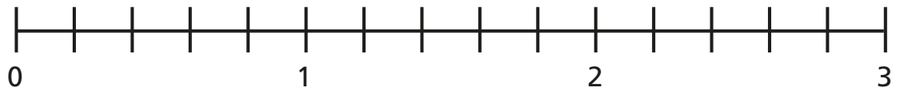
$3 \times \frac{3}{4} = \square = \square$

b)



$4 \times \frac{3}{5} = \square = \square$

c)



$3 \times \frac{4}{5} = \square = \square$

6 Complete the multiplications.

a) $5 \times \frac{2}{3} = \square = \square$

b) $4 \times \frac{4}{5} = \square = \square$

c) $\frac{2}{7} \times 11 = \square = \square$

d) $4 \times \frac{7}{9} = \square = \square$

e) $17 \times \frac{2}{11} = \square = \square$

f) Describe the pattern you can see in the answers.

g) What could the next multiplication in the pattern be?

Write two possible options.

_____

_____

7 Here are some digit cards.

1	3	5	7

Use the digit cards to complete the multiplication.

$\square \times \frac{\square}{8} = \frac{15}{8} = \square\frac{\square}{8}$