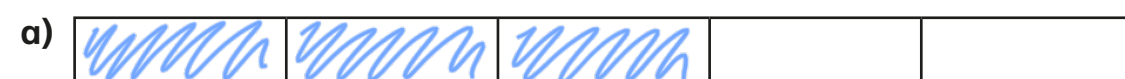


Multiply unit fractions by an integer



1 Complete the calculations.

Use the bar models to help you.



$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{3}{5}$$

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



$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{4}{7}$$

$$4 \times \frac{1}{7} = \frac{4}{7}$$



$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{5}{8}$$

$$5 \times \frac{1}{8} = \frac{5}{8}$$



$$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \frac{7}{10}$$

$$7 \times \frac{1}{10} = \frac{7}{10}$$

2 Complete the multiplications.

a) $3 \times \frac{1}{8} = \frac{3}{8}$

e) $\frac{1}{5} \times 4 = \frac{4}{5}$

b) $3 \times \frac{1}{10} = \frac{3}{10}$

f) $\frac{1}{9} \times 8 = \frac{8}{9}$

c) $\frac{1}{8} \times 5 = \frac{5}{8}$

g) $8 \times \frac{1}{11} = \frac{8}{11}$

d) $9 \times \frac{1}{10} = \frac{9}{10}$

h) $\frac{1}{11} \times 10 = \frac{10}{11}$

3 Match the addition to the equivalent multiplication.

$$\frac{1}{3} + \frac{1}{3}$$

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

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

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

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

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

$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$$

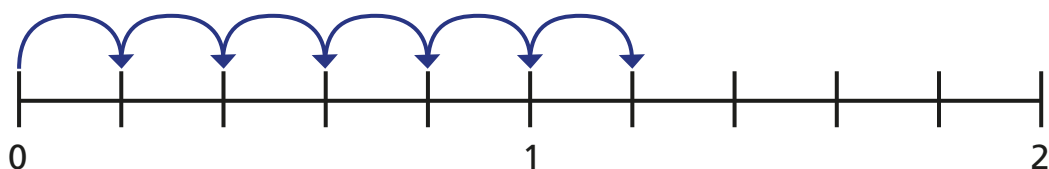
$$2 \times \frac{1}{3}$$

- 4 A pizza is cut into sixths.
Jack eats five of the slices.
Write a multiplication to represent this.

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

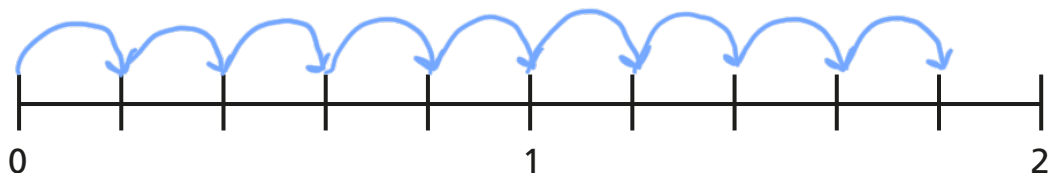
- 5 Complete the multiplications.
Use the number lines to help you.
Give each answer as an improper fraction and as a mixed number.

a)



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

b)



$$9 \times \frac{1}{5} = \boxed{\frac{9}{5}} = \boxed{1\frac{4}{5}}$$

- 6 Complete the multiplications.

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

b) $11 \times \frac{1}{9} = \boxed{\frac{11}{9}} = \boxed{1\frac{2}{9}}$

c) $\frac{1}{8} \times 11 = \boxed{\frac{11}{8}} = \boxed{1\frac{3}{8}}$

d) $11 \times \frac{1}{7} = \boxed{\frac{11}{7}} = \boxed{1\frac{4}{7}}$

e) $11 \times \frac{1}{6} = \boxed{\frac{11}{6}} = \boxed{1\frac{5}{6}}$

What do you notice?

Does this pattern continue?

- 7 Complete the calculations.

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

e) $\frac{1}{8} \times \boxed{11} = 1\frac{3}{8}$

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

f) $\boxed{7} \times \frac{1}{2} = 3\frac{1}{2}$

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

g) $\boxed{10} \times \frac{1}{3} = 3\frac{1}{3}$

d) $\frac{1}{7} \times \boxed{10} = 1\frac{3}{7}$

h) $\frac{1}{4} \times \boxed{13} = 3\frac{1}{4}$



Multiply non-unit fractions by an integer



1 Complete the calculations.

Use the bar models to help you.



$$\frac{2}{7} + \frac{2}{7} + \frac{2}{7} = \frac{6}{7}$$

$$3 \times \frac{2}{7} = \frac{6}{7}$$



$$\frac{3}{10} + \frac{3}{10} + \frac{3}{10} = \frac{9}{10}$$

$$3 \times \frac{3}{10} = \frac{9}{10}$$



$$\frac{2}{9} + \frac{2}{9} + \frac{2}{9} + \frac{2}{9} = \frac{8}{9}$$

$$4 \times \frac{2}{9} = \frac{8}{9}$$



$$\frac{4}{9} + \frac{4}{9} = \frac{8}{9}$$

$$2 \times \frac{4}{9} = \frac{8}{9}$$

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

2 Complete the multiplications.

a) $2 \times \frac{3}{7} = \frac{6}{7}$

d) $5 \times \frac{2}{11} = \frac{10}{11}$

b) $3 \times \frac{3}{11} = \frac{9}{11}$

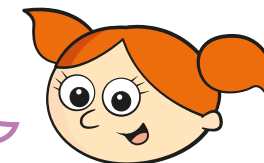
e) $\frac{2}{15} \times 7 = \frac{14}{15}$

c) $\frac{2}{11} \times 4 = \frac{8}{11}$

f) $\frac{7}{15} \times 2 = \frac{14}{15}$

3

$$\frac{4}{11} \times 2 = \frac{8}{22}$$



Explain the mistake that Alex has made.

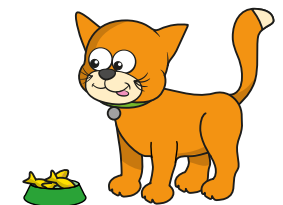
She has multiplied both the numerator and the denominator.

$$\frac{4}{11} \times 2 = \frac{8}{11}$$

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?



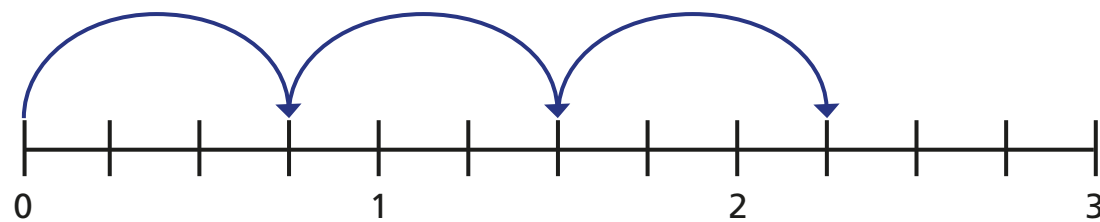
The cat eats $\frac{8}{15}$ of the bag in 4 days.

5 Complete the multiplications.

Use the number lines to help you.

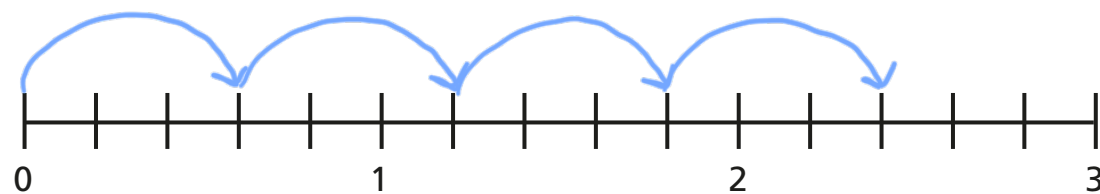
Give each answer as an improper fraction and as a mixed number.

a)



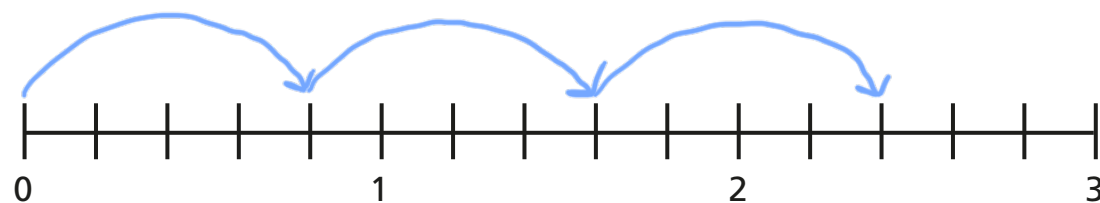
$$3 \times \frac{3}{4} = \boxed{\frac{9}{4}} = \boxed{2\frac{1}{4}}$$

b)



$$4 \times \frac{3}{5} = \boxed{\frac{12}{5}} = \boxed{2\frac{2}{5}}$$

c)



$$3 \times \frac{4}{5} = \boxed{\frac{12}{5}} = \boxed{2\frac{2}{5}}$$



6 Complete the multiplications.

a) $5 \times \frac{2}{3} = \boxed{\frac{10}{3}} = \boxed{3\frac{1}{3}}$

b) $4 \times \frac{4}{5} = \boxed{\frac{16}{5}} = \boxed{3\frac{1}{5}}$

c) $\frac{2}{7} \times 11 = \boxed{\frac{22}{7}} = \boxed{3\frac{1}{7}}$

d) $4 \times \frac{7}{9} = \boxed{\frac{28}{9}} = \boxed{3\frac{1}{9}}$

e) $17 \times \frac{2}{11} = \boxed{\frac{34}{11}} = \boxed{3\frac{1}{11}}$

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

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

Write two possible options.

e.g. $\frac{5}{13} \times 8$
 $10 \times \frac{4}{13}$

7 Here are some digit cards.



Use the digit cards to complete the multiplication.

$$\boxed{5} \times \frac{\boxed{3}}{8} = \frac{15}{8} = \boxed{1} \frac{\boxed{7}}{8}$$