Multiply Non-Unit Fractions

To multiply non-unit fractions by an integer.

1. Complete the models and calculate the answers. They have been started to help you.

a. $\frac{2}{7} \times 3 =$

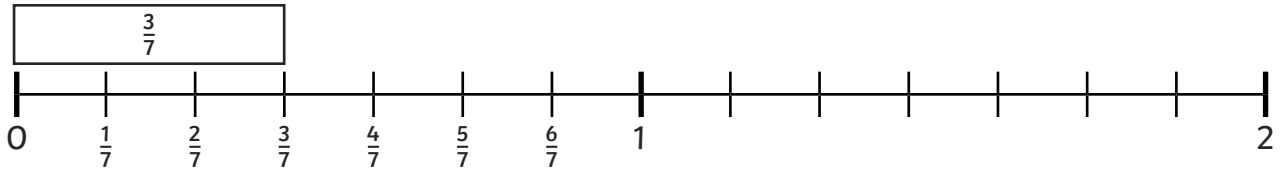
$\frac{2}{7} + \frac{2}{7} + \frac{2}{7} =$

b. $\frac{3}{4} \times 5 =$

$\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} =$

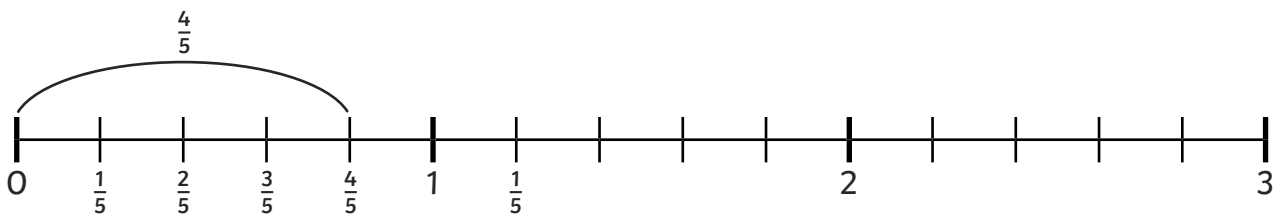
c. $\frac{3}{7} \times 4 =$

$\frac{3}{7} + \frac{3}{7} + \frac{3}{7} + \frac{3}{7} =$



d. $\frac{4}{5} \times 3 =$

$\frac{4}{5} + \frac{4}{5} + \frac{4}{5} =$



2. Draw your own models to calculate the answers.

a. $\frac{5}{9} \times 3 =$

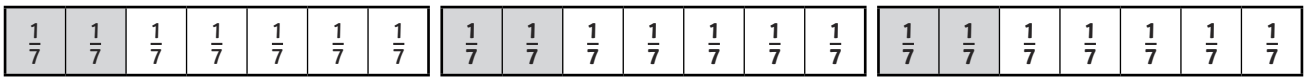
b. $\frac{3}{5} \times 4 =$

c. $\frac{2}{3} \times 5 =$

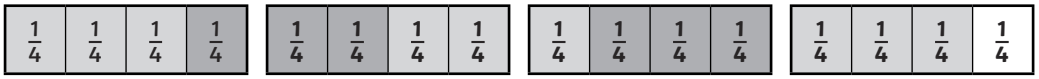
d. $\frac{5}{8} \times 4 =$

Multiply Non-Unit Fractions **Answers**

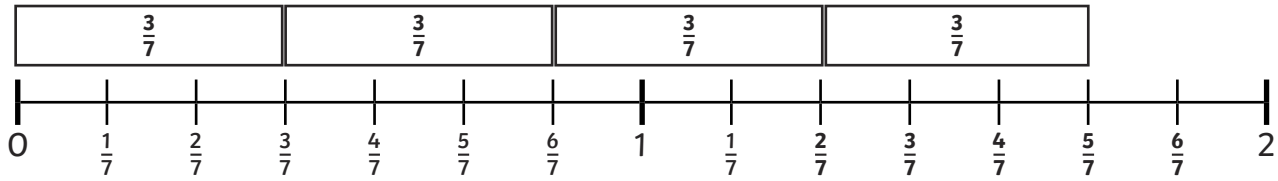
1. a. $\frac{2}{7} \times 3 = \frac{6}{7}$ $\frac{2}{7} + \frac{2}{7} + \frac{2}{7} = \frac{6}{7}$



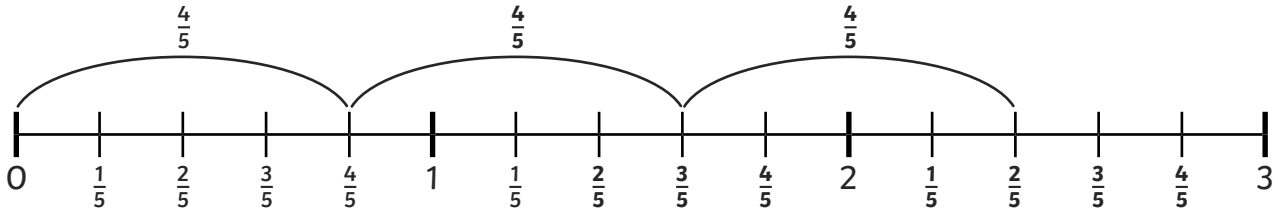
b. $\frac{3}{4} \times 5 = \frac{15}{4} = 3\frac{3}{4}$ $\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} = \frac{15}{4} = 3\frac{3}{4}$



c. $\frac{3}{7} \times 4 = \frac{12}{7} = 1\frac{5}{7}$ $\frac{3}{7} + \frac{3}{7} + \frac{3}{7} + \frac{3}{7} = \frac{12}{7} = 1\frac{5}{7}$



d. $\frac{4}{5} \times 3 = \frac{12}{5} = 2\frac{2}{5}$ $\frac{4}{5} + \frac{4}{5} + \frac{4}{5} = \frac{12}{5} = 2\frac{2}{5}$



2. **Models drawn to accompany answers.**

a. $\frac{5}{9} \times 3 = \frac{15}{9} = 1\frac{6}{9}$

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

c. $\frac{2}{3} \times 5 = \frac{10}{3} = 3\frac{1}{3}$

d. $\frac{5}{8} \times 4 = \frac{20}{8} = 2\frac{4}{8}$

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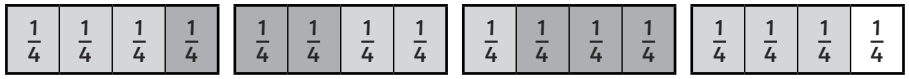
Here are 4 different models for this calculation: $\frac{3}{4} \times 5$

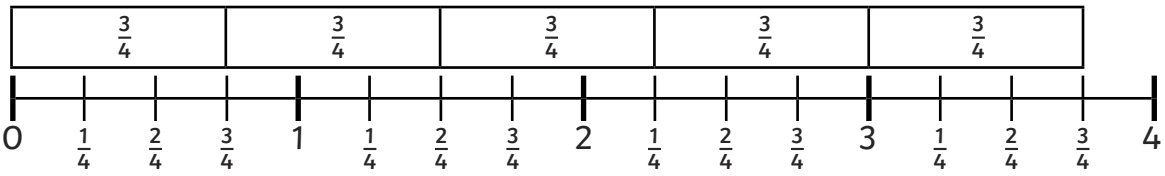
Model 1

$\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4}$

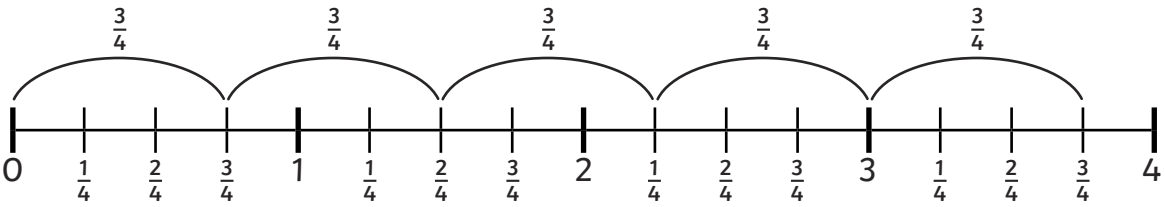
Model 2



Model 3



Model 4



1. Multiply the fractions by the integers, using any of the methods above.

a. $\frac{5}{7} \times 3 =$

b. $\frac{2}{3} \times 4 =$

c. $\frac{2}{6} \times 5 =$

d. $\frac{4}{7} \times 4 =$

e. $\frac{3}{8} \times 4 =$

f. $\frac{2}{9} \times 7 =$

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

Multiply Non-Unit Fractions **Answers**

1. **Models drawn to accompany answers.**

a. $\frac{5}{7} \times 3 = \frac{15}{7} = \mathbf{2\frac{1}{7}}$

b. $\frac{2}{3} \times 4 = \frac{8}{3} = \mathbf{2\frac{2}{3}}$

c. $\frac{2}{6} \times 5 = \frac{10}{6} = \mathbf{1\frac{4}{6}}$

d. $\frac{4}{7} \times 4 = \frac{16}{7} = \mathbf{2\frac{2}{7}}$

e. $\frac{3}{8} \times 4 = \frac{12}{8} = \mathbf{1\frac{4}{8}}$

f. $\frac{2}{9} \times 7 = \frac{14}{9} = \mathbf{1\frac{5}{9}}$

g. $\frac{3}{10} \times 9 = \frac{27}{10} = \mathbf{2\frac{7}{10}}$

Multiply Non-Unit Fractions

To multiply non-unit fractions by an integer.

1. Draw your own models to help you calculate the answers.

a. $\frac{4}{5} \times 6 =$

b. $\frac{5}{9} \times 8 =$

c. $\frac{6}{7} \times 6 =$

2. Here is how you could answer $\frac{3}{7} \times 5$ without a model:

$$\frac{3}{7} \times 5 = \frac{3 \times 5}{7} = \frac{15}{7} = 2\frac{1}{5}$$

Use this method to calculate the answers:

a. $\frac{9}{10} \times 7 =$

b. $\frac{6}{11} \times 9 =$

3. Complete these calculations to make them true. All should be non-unit proper fractions.

a. $\frac{4}{7} \times 3 < \frac{\square}{7} \times 4$

b. $\frac{7}{9} \times 3 > \frac{\square}{9} \times 7$

c. $\frac{3}{10} \times 6 < \frac{\square}{10} \times 3$

4. Write a rule to explain how to multiply a non-unit fraction by an integer. Use the words **numerator**, **denominator** and **integer** in your rule.

Multiply Non-Unit Fractions **Answers**

1. a. $\frac{4}{5} \times 6 = \frac{24}{5} = 4\frac{4}{5}$ b. $\frac{5}{9} \times 8 = \frac{40}{9} = 4\frac{4}{9}$ c. $\frac{6}{7} \times 6 = \frac{36}{7} = 5\frac{1}{7}$

2. a. $\frac{9}{10} \times 7 = \frac{63}{10} = 6\frac{3}{10}$ b. $\frac{6}{11} \times 9 = \frac{54}{11} = 4\frac{10}{11}$

3. a. $\frac{4}{7} \times 3 < \frac{4}{7} \times 4$ or $\frac{5}{7} \times 4$ or $\frac{6}{7} \times 4$

   b. $\frac{7}{9} \times 3 > \frac{2}{9} \times 7$

   c. $\frac{3}{10} \times 6 = \frac{6}{10} \times 3$

3. **Rule for how to multiply a non-unit fraction by an integer, for example:**

   When multiplying a non-unit fraction by an integer, the denominator stays the same and the numerator is multiplied by the integer.