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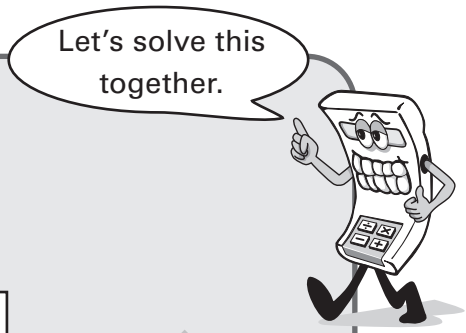
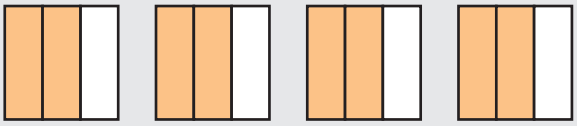
MULTIPLY WHOLE NUMBERS BY FRACTIONS



Use models to solve the problem.

1. Find $4 \times \frac{2}{3}$.

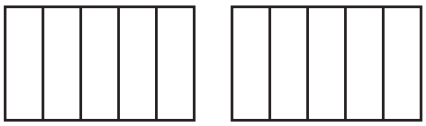
$4 \times \frac{2}{3}$ means 4 groups of $\frac{2}{3}$.



Solution: $4 \times \frac{2}{3} = \frac{\square}{\square} + \frac{\square}{\square} + \frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square} = \square\frac{\square}{\square}$

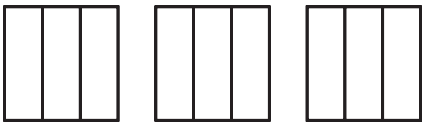
Solve each problem. Shade the models to find the answers. Write the solution.

2. $2 \times \frac{4}{5}$



Solution: _____

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



Solution: _____

Solve each problem. Choose the best answer.

4. $7 \times \frac{5}{9}$ means _____ groups of_____.

Ⓐ 7; 5

Ⓑ 5; $\frac{7}{9}$

Ⓒ 7; $\frac{5}{9}$

Ⓓ 9; $\frac{5}{7}$

5. Amir practises piano for $\frac{2}{3}$ hour each day. How long does he practise in 5 days?

Ⓐ $1\frac{2}{3}$ hours

Ⓑ $3\frac{1}{3}$ hours

Ⓒ $3\frac{2}{3}$ hours

Ⓓ $5\frac{2}{3}$ hours

Solve each problem. Choose the best answer.

6. Dorrie has 3 pieces of ribbon. Each ribbon is $\frac{3}{4}$ of a metre long. How much ribbon does she have?

Ⓐ $2\frac{1}{4}$ metres
Ⓒ $3\frac{3}{4}$ metres
Ⓑ $2\frac{1}{2}$ metres
Ⓓ 4 metres

7. How can $5 \times \frac{3}{8}$ be written using addition?

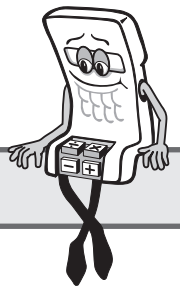
Ⓐ $\frac{5}{8} + \frac{5}{8} + \frac{5}{8} + \frac{5}{8} + \frac{5}{8}$
Ⓑ $5 + \frac{3}{8}$
Ⓒ $\frac{3}{8} + \frac{3}{8} + \frac{3}{8}$
Ⓓ $\frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8}$

8. Ian needs $\frac{5}{8}$ cup of sugar to make one batch of biscuits. How much sugar does he need to make 3 batches of biscuits?

Ⓐ $1\frac{5}{8}$ cups
Ⓒ $2\frac{1}{8}$ cups
Ⓑ $1\frac{7}{8}$ cups
Ⓓ $3\frac{5}{8}$ cups

9. Katie fills bowls of yoghurt for her family. She puts $\frac{3}{5}$ cup of yoghurt into each bowl. How much yoghurt does Katie use for 4 bowls?

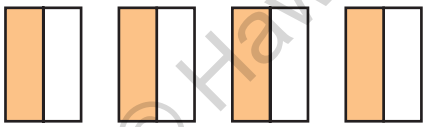
Ⓐ $2\frac{1}{5}$ cups
Ⓒ $3\frac{4}{5}$ cups
Ⓑ $2\frac{2}{5}$ cups
Ⓓ $4\frac{3}{5}$ cups



REASONING

Solve the problem. Explain your thinking.

10. What multiplication problem is shown in the model? Find the product.



Solution: $4 \times$ _____ = _____

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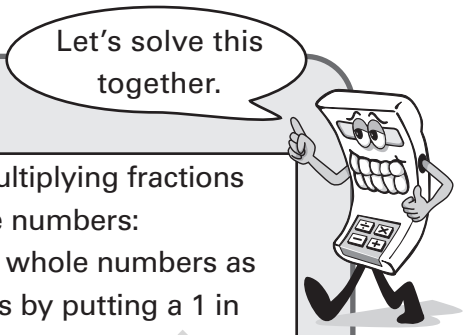
MULTIPLY WHOLE NUMBERS BY FRACTIONS



Use multiplication to solve the problem.

1. Multiply $5 \times \frac{3}{4}$.

$5 \times \frac{3}{4} = \frac{5}{1} \times \frac{3}{4}$ Write the whole number as a fraction.

$= \frac{\square}{\square}$ Multiply the **numerators**. Multiply the **denominators**.

$= \square \frac{\square}{\square}$ Write the improper fraction as a mixed number.

Solution: $\square \frac{\square}{\square}$

When multiplying fractions by whole numbers:
- Rewrite whole numbers as fractions by putting a 1 in the denominator.
- If the answer is an **improper fraction**, then rewrite it as a **mixed number**.
- Simplify your answer.

Solve the problem. Fill in the blanks.

2. $4 \times \frac{2}{7}$

$4 \times \frac{2}{7} = \frac{\square}{\square} \times \frac{\square}{\square}$

$= \frac{\square}{\square}$

$= \square \frac{\square}{\square}$

MENTAL MATHS

Multiply using mental maths.

3. $3 \times \frac{3}{10} =$ _____

4. $2 \times \frac{2}{5} =$ _____

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

6. $3 \times \frac{2}{11} =$ _____

Solve each problem. Choose the best answer.

7. Julie is making 6 bags of snack mix. She puts $\frac{5}{8}$ of a kilogram of peanuts in each bag. How many kilograms of peanuts does she use?

Ⓐ $3\frac{3}{4}$ kilograms Ⓒ $6\frac{5}{8}$ kilograms

Ⓑ $5\frac{1}{8}$ kilograms Ⓓ $6\frac{2}{3}$ kilograms

8. Kristi is making bookshelves. If each bookshelf is $\frac{7}{10}$ of a metre long, how much shelving will she need to make 5 shelves?

Ⓐ $2\frac{1}{2}$ metres Ⓒ $3\frac{1}{2}$ metres

Ⓑ $2\frac{7}{10}$ metres Ⓓ $5\frac{7}{10}$ metres

9. There are 9 students in the cooking club. If each student brings $\frac{2}{5}$ of a kilogram of vegetables to make soup, how many kilograms of vegetables will they have?

Ⓐ $2\frac{4}{5}$ kilograms Ⓒ $4\frac{1}{5}$ kilograms

Ⓑ $3\frac{3}{5}$ kilograms Ⓓ $4\frac{1}{2}$ kilograms

10. A race car travels one kilometre in $\frac{3}{8}$ minute. How long does it take the car to travel 8 kilometres?

Ⓐ $1\frac{3}{8}$ minutes Ⓒ 3 minutes

Ⓑ $1\frac{5}{8}$ minutes Ⓓ $3\frac{3}{8}$ minutes

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REVIEW 1: PRACTICES 1–4

Solve each problem. Choose the best answer.

1. A bag contains 12 kilograms of rice. How many $\frac{2}{3}$-kilogram servings are in the box?

Ⓐ 9 Ⓒ 15

Ⓑ 14 Ⓓ 18

2. Cai is making pudding for her family. There are 5 people in Cai's family. If she wants to give each person $\frac{7}{8}$ of a cup of pudding, how much will she need?

Ⓐ $4\frac{1}{8}$ cups Ⓒ $5\frac{1}{7}$ cups

Ⓑ $4\frac{3}{8}$ cups Ⓓ $5\frac{5}{7}$ cups

3. Dario ran $2\frac{3}{4}$ kilometres. His friend, Micah, ran with him for $\frac{2}{5}$ of the run. Which expression gives the distance that Micah ran?

Ⓐ $2\frac{3}{4} \div \frac{2}{5}$ Ⓒ $2\frac{3}{4} - \frac{2}{5}$

Ⓑ $\frac{2}{5} \div 2\frac{3}{4}$ Ⓓ $\frac{2}{5} \times 2\frac{3}{4}$

4. How many $\frac{2}{7}$-metre pieces can be cut from a string that is $\frac{9}{10}$ of a metre long?

Ⓐ $3\frac{3}{20}$ Ⓒ $3\frac{8}{9}$

Ⓑ $3\frac{13}{20}$ Ⓓ $4\frac{1}{2}$

5. A tree sloth moves at a speed of $\frac{1}{20}$ of a metre per second. Which expression gives the distance a tree sloth moves in 5 seconds?

Ⓐ $5 \div \frac{1}{20}$ Ⓒ $5 \times \frac{1}{20}$

Ⓑ $20 \times \frac{1}{5}$ Ⓓ $20 \div \frac{1}{5}$

6. Five ninths of the cars in a carpark are sedans. Three eighths of the sedans in the carpark are blue. What fraction of the cars in the carpark are blue sedans?

Ⓐ $\frac{15}{72}$ Ⓒ $\frac{27}{40}$

Ⓑ $\frac{8}{17}$ Ⓓ $\frac{67}{72}$

REASONING

Use the table for numbers 7–10. Solve each problem. Explain your thinking.

The table shows the package size and serving size for three different brands of breakfast cereal.

	Brand A	Brand B	Brand C
Package size	10 cups	9 cups	7 cups
Serving size	$\frac{5}{6}$ of a cup	$\frac{3}{5}$ of a cup	$\frac{7}{8}$ of a cup

7. Which brand has the most servings in a package?

8. For children under age 5, the serving size is $\frac{2}{3}$ of the regular serving size. What is the serving size for Brand C for children under age 5?

9. Trent is making snack mix using Brand A. He puts $\frac{1}{2}$ cup of cereal in each serving of snack mix. How many servings of snack mix can he make from one serving of Brand A?

10. How many packages of Brand B are needed for 20 servings?

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