

Multiplying Mixed Numbers

How to find the product of two mixed numbers:

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

Step 1

Estimate by rounding.

$$\begin{array}{r} 3\frac{2}{3} \times 4\frac{1}{2} \\ \downarrow \quad \downarrow \\ 4 \times 5 = 20 \end{array}$$

Then write each mixed number as an improper fraction.

$$\begin{array}{r} 3\frac{2}{3} \times 4\frac{1}{2} \\ \downarrow \quad \downarrow \\ \frac{11}{3} \times \frac{9}{2} \end{array}$$

Step 2

Look for common factors and simplify.

$$\frac{11}{\cancel{3}} \times \frac{\cancel{9}^3}{2} = \frac{11}{1} \times \frac{3}{2}$$

Step 3

Multiply. Write the product as a mixed number.

$$\frac{11}{1} \times \frac{3}{2} = \frac{33}{2} = 16\frac{1}{2}$$

$16\frac{1}{2}$ is close to 20, so the answer is reasonable.

Find each product. Simplify if possible.

1. $2\frac{3}{4} \times 3\frac{1}{2} =$ _____

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

3. $6 \times 3\frac{1}{4} =$ _____

4. $1\frac{2}{5} \times 3\frac{1}{4} =$ _____

5. $4\frac{1}{2} \times 16 =$ _____

6. $1\frac{3}{8} \times 2\frac{1}{2} =$ _____

7. **Number Sense** Is $2 \times 17\frac{5}{6}$ greater than or less than 36? Explain.

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Find each product. Simplify if possible.

1. $3\frac{1}{2} \times 1\frac{2}{3} =$ _____

2. $1\frac{1}{8} \times 2\frac{1}{3} =$ _____

3. $7 \times 1\frac{1}{4} =$ _____

4. $2\frac{1}{6} \times 1\frac{1}{5} =$ _____

5. $3\frac{1}{6} \times 18 =$ _____

6. $1\frac{1}{8} \times 2\frac{1}{2} =$ _____

7. $1\frac{2}{3} \times 2\frac{1}{4} =$ _____

8. $10 \times 1\frac{1}{3} =$ _____

9. $2\frac{4}{5} \times 3\frac{1}{3} =$ _____

10. **Number Sense** Is $6\frac{1}{4} \times 3$ greater than or less than 18? Explain.

Average Precipitation in Boston

Month	Precipitation (in inches)
March	$3\frac{7}{10}$
July	$2\frac{4}{5}$
November	$4\frac{1}{5}$

11. If Boston receives $\frac{5}{7}$ of its average July precipitation, how much precipitation will it receive?

12. How much precipitation will Boston receive if it receives half of the March average?

13. If Boston receives $1\frac{1}{3}$ of its average November precipitation, how much precipitation will it receive?

Test Prep

14. Clarice is making a recipe that requires $1\frac{1}{3}$ c of raisins for 1 batch. How many cups of raisins does she need to make $3\frac{1}{2}$ batches?

A. $3\frac{3}{4}$ c

B. $4\frac{1}{3}$ c

C. $4\frac{2}{3}$ c

D. $5\frac{1}{2}$ c

15. **Writing in Math** Explain how you would find the product of $1\frac{2}{3}$ and $3\frac{1}{2}$.
