

# Multiplying Mixed Numbers

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 24

## Q Quick Review

To multiply mixed numbers, **first change each one into an improper fraction**. For  $1\frac{1}{2}$ : multiply  $1 \times 2 = 2$ , add the 1 to get 3, so it becomes  $\frac{3}{2}$ . Then multiply the fractions the usual way — numerators times numerators, denominators times denominators. **Cancel** common factors to keep the numbers small if you can. Finally, **convert the answer back** to a mixed number and simplify. Never try to multiply the whole parts and fraction parts separately — that does not work!

◇ **Example:** Multiply  $1\frac{1}{2} \times 1\frac{1}{3}$ .

⇒ Turn each mixed number into an improper fraction. For  $1\frac{1}{2}$ :  $1 \times 2 + 1 = 3$ , so  $\frac{3}{2}$ . For  $1\frac{1}{3}$ :  $1 \times 3 + 1 = 4$ , so  $\frac{4}{3}$ . Now multiply across:  $\frac{3 \times 4}{2 \times 3} = \frac{12}{6}$ . Simplify:  $\frac{12}{6} = 2$ . So the product is exactly 2.

**Answer:** 2

## PRACTICE

Multiply. Write each answer in simplest form.

- |  |       |  |       |
|--|-------|--|-------|
| 1. $1\frac{1}{2} \times 1\frac{1}{3}$  | _____ | 11. $1\frac{1}{6} \times 2\frac{2}{7}$ | _____ |
| 2. $1\frac{3}{4} \times 1\frac{1}{7}$  | _____ | 12. $3\frac{1}{3} \times 1\frac{1}{2}$ | _____ |
| 3. $2\frac{1}{2} \times 1\frac{1}{5}$  | _____ | 13. $2\frac{2}{5} \times 1\frac{1}{4}$ | _____ |
| 4. $2\frac{1}{3} \times 2\frac{1}{4}$  | _____ | 14. $1\frac{1}{8} \times 1\frac{1}{3}$ | _____ |
| 5. $2\frac{3}{4} \times 2$             | _____ | 15. $4\frac{1}{2} \times 1\frac{1}{3}$ | _____ |
| 6. $2\frac{3}{5} \times 3\frac{1}{3}$  | _____ | 16. $2\frac{1}{2} \times 2\frac{2}{5}$ | _____ |
| 7. $1\frac{1}{4} \times 1\frac{3}{5}$  | _____ | 17. $1\frac{5}{6} \times 1\frac{1}{2}$ | _____ |
| 8. $3\frac{1}{2} \times 1\frac{2}{7}$  | _____ | 18. $3\frac{1}{5} \times 1\frac{1}{4}$ | _____ |
| 9. $1\frac{2}{3} \times 1\frac{1}{5}$  | _____ | 19. $2\frac{1}{6} \times 1\frac{1}{5}$ | _____ |
| 10. $2\frac{1}{4} \times 1\frac{1}{3}$ | _____ | 20. $1\frac{3}{4} \times 2\frac{2}{7}$ | _____ |

## ◆ Word Problems

21. A bag of rice weighs  $2\frac{1}{2}$  pounds. A chef buys  $1\frac{1}{5}$  bags. How many pounds of rice is that? \_\_\_\_\_
22. One lap of a track is  $1\frac{1}{4}$  miles. A runner completes  $1\frac{3}{5}$  laps. How far did the runner go? \_\_\_\_\_
23. A recipe needs  $2\frac{1}{4}$  cups of flour. Dana makes  $1\frac{1}{3}$  batches. How much flour does she need? \_\_\_\_\_
24. A garden bed is  $3\frac{1}{3}$  feet wide. A second bed is  $1\frac{1}{2}$  times as wide. How wide is the second bed? \_\_\_\_\_



## Answer Keys

- |                            |                                |
|----------------------------|--------------------------------|
| 1. $\boxed{2}$             | 13. $\boxed{3}$                |
| 2. $\boxed{2}$             | 14. $\boxed{1\frac{1}{2}}$     |
| 3. $\boxed{3}$             | 15. $\boxed{6}$                |
| 4. $\boxed{5\frac{1}{4}}$  | 16. $\boxed{6}$                |
| 5. $\boxed{5\frac{1}{2}}$  | 17. $\boxed{2\frac{3}{4}}$     |
| 6. $\boxed{8\frac{2}{3}}$  | 18. $\boxed{4}$                |
| 7. $\boxed{2}$             | 19. $\boxed{2\frac{3}{5}}$     |
| 8. $\boxed{4\frac{1}{2}}$  | 20. $\boxed{4}$                |
| 9. $\boxed{2}$             | 21. $\boxed{3 \text{ pounds}}$ |
| 10. $\boxed{3}$            | 22. $\boxed{2 \text{ miles}}$  |
| 11. $\boxed{2\frac{2}{3}}$ | 23. $\boxed{3 \text{ cups}}$   |
| 12. $\boxed{5}$            | 24. $\boxed{5 \text{ feet}}$   |

### Step-by-Step Explanations

- |   |  |
|---|--|
| 1. $\frac{3}{4} \times \frac{4}{3} = \frac{12}{12} = 2.$                              | 13. $\frac{12}{5} \times \frac{5}{4} = \frac{60}{20} = 3.$                           |
| 2. $\frac{7}{8} \times \frac{8}{7} = \frac{56}{56} = 2.$                              | 14. $\frac{9}{8} \times \frac{4}{3} = \frac{36}{24} = \frac{3}{2} = 1\frac{1}{2}.$   |
| 3. $\frac{3}{5} \times \frac{5}{3} = \frac{15}{15} = 3.$                              | 15. $\frac{5}{2} \times \frac{4}{3} = \frac{20}{6} = 6.$                             |
| 4. $\frac{7}{3} \times \frac{9}{4} = \frac{63}{12} = \frac{21}{4} = 5\frac{1}{4}.$    | 16. $\frac{5}{2} \times \frac{12}{5} = \frac{60}{10} = 6.$                           |
| 5. $\frac{11}{4} \times \frac{2}{4} = \frac{22}{4} = \frac{11}{2} = 5\frac{1}{2}.$    | 17. $\frac{11}{6} \times \frac{3}{2} = \frac{33}{12} = \frac{11}{4} = 2\frac{3}{4}.$ |
| 6. $\frac{13}{5} \times \frac{10}{3} = \frac{130}{15} = \frac{26}{3} = 8\frac{2}{3}.$ | 18. $\frac{16}{5} \times \frac{5}{4} = \frac{80}{20} = 4.$                           |
| 7. $\frac{5}{4} \times \frac{8}{5} = \frac{40}{20} = 2.$                              | 19. $\frac{13}{6} \times \frac{6}{5} = \frac{78}{30} = \frac{13}{5} = 2\frac{3}{5}.$ |
| 8. $\frac{6}{7} \times \frac{9}{7} = \frac{54}{49} = \frac{9}{7} = 4\frac{1}{2}.$     | 20. $\frac{7}{4} \times \frac{16}{7} = \frac{112}{28} = 4.$                          |
| 9. $\frac{3}{5} \times \frac{5}{3} = \frac{15}{15} = 2.$                              | 21. $\frac{5}{2} \times \frac{6}{5} = \frac{30}{10} = 3 \text{ pounds}.$             |
| 10. $\frac{9}{4} \times \frac{4}{3} = \frac{36}{12} = 3.$                             | 22. $\frac{2}{5} \times \frac{10}{2} = \frac{20}{10} = 2 \text{ miles}.$             |
| 11. $\frac{7}{6} \times \frac{16}{7} = \frac{112}{42} = \frac{8}{3} = 2\frac{2}{3}.$  | 23. $\frac{9}{4} \times \frac{4}{3} = \frac{36}{12} = 3 \text{ cups}.$               |
| 12. $\frac{10}{3} \times \frac{3}{2} = \frac{30}{6} = 5.$                             | 24. $\frac{10}{3} \times \frac{3}{2} = \frac{30}{6} = 5 \text{ feet}.$               |



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