

Improper fractions & mixed numbers



Convert between improper fractions and mixed numbers in both directions.

Name _____

Date _____

Divide, or multiply and add

To convert an improper fraction to a mixed number, divide the numerator by the denominator: the quotient is the whole number and the remainder becomes the new numerator (same denominator). To convert a mixed number to an improper fraction, multiply the whole number by the denominator, add the numerator, and keep the same denominator.

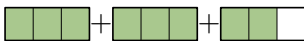
Worked example Convert $\frac{11}{4}$ to a mixed number using the bar.



$$11 \div 4 = 2 \text{ remainder } 3.$$

$$\frac{11}{4} = 2\frac{3}{4}.$$

1. What mixed number does this bar show?

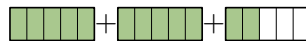


Solution

$$8 \div 3 = 2 \text{ remainder } 2.$$

$$\frac{8}{3} = 2\frac{2}{3}.$$

2. What mixed number does this bar show?



Solution

$$12 \div 5 = 2 \text{ remainder } 2.$$

$$\frac{12}{5} = 2\frac{2}{5}.$$

3. Convert $\frac{9}{2}$ to a mixed number.

Solution

$$9 \div 2 = 4 \text{ remainder } 1.$$

$$\frac{9}{2} = 4\frac{1}{2}.$$

4. Convert $\frac{13}{6}$ to a mixed number.

Solution

$$13 \div 6 = 2 \text{ remainder } 1.$$

$$\frac{13}{6} = 2\frac{1}{6}.$$

5. Convert $2\frac{1}{3}$ to an improper fraction.

Solution

$$2 \times 3 + 1 = 7.$$

$$2\frac{1}{3} = \frac{7}{3}.$$

6. Convert $3\frac{1}{4}$ to an improper fraction.

Solution

$$3 \times 4 + 1 = 13.$$

$$3\frac{1}{4} = \frac{13}{4}.$$

7. Convert $\frac{17}{5}$ to a mixed number.

Solution

$$17 \div 5 = 3 \text{ remainder } 2.$$

$$\frac{17}{5} = 3\frac{2}{5}.$$

8. Is $\frac{14}{5} = 2\frac{4}{5}$ correct?

Solution

Yes: $14 \div 5 = 2 \text{ remainder } 4$, so

$$\frac{14}{5} = 2\frac{4}{5}.$$

9. Fill in the blank: $\frac{17}{4} = \square\frac{\square}{4}$.

Solution

$$17 \div 4 = 4 \text{ remainder } 1.$$

$$\square = 4, \square = 1.$$

Improper fractions & mixed numbers (continued)

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Name _____

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10. What mixed number does this bar show?



Solution

$$16 \div 7 = 2 \text{ remainder } 2.$$

$$\frac{16}{7} = 2\frac{2}{7}.$$

11. Convert $6\frac{1}{6}$ to an improper fraction.

Solution

$$6 \times 6 + 1 = 37.$$

$$6\frac{1}{6} = \frac{37}{6}.$$

12. Convert $\frac{23}{6}$ to a mixed number.

Solution

$$23 \div 6 = 3 \text{ remainder } 5.$$

$$\frac{23}{6} = 3\frac{5}{6}.$$

13. Which is greater: $\frac{11}{3}$ or $3\frac{1}{2}$?

Solution

$$\frac{11}{3} = 3\frac{2}{3}, \text{ and } 3\frac{2}{3} > 3\frac{1}{2}.$$

So $\frac{11}{3}$ is greater.

14. Explain in one sentence what the denominator tells you in $4\frac{3}{7}$.

Solution

It tells you how many equal parts one whole is split into (sevenths).

15. Convert $7\frac{2}{9}$ to an improper fraction.

Solution

$$7 \times 9 + 2 = 65.$$

$$7\frac{2}{9} = \frac{65}{9}.$$

16. A student says $4\frac{2}{3} = \frac{14}{3}$. Are they correct? Explain.

Solution

$$\text{Yes: } 4 \times 3 + 2 = 14, \text{ so } 4\frac{2}{3} = \frac{14}{3}.$$

17. Write $\frac{35}{4}$ as a mixed number, then place it between two whole numbers.

Solution

$$35 \div 4 = 8 \text{ remainder } 3, \text{ so}$$

$$\frac{35}{4} = 8\frac{3}{4}.$$

This sits between 8 and 9.

18. A ribbon is $\frac{17}{3}$ m long. Write this as a mixed number.

Solution

$$17 \div 3 = 5 \text{ remainder } 2.$$

$$\frac{17}{3} = 5\frac{2}{3} \text{ m.}$$