

# Converting Between Fractions, Decimals, and Percents

Name: \_\_\_\_\_

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Think of fractions, decimals, and percents as three disguises for the *same* number—once you can switch freely among them, problems become much easier to solve! A **percent** simply means “per hundred,” so 25% is the same as  $\frac{25}{100}$  is the same as 0.25. You will use this skill everywhere: store discounts, test scores, probability, and data in tables and graphs. The value never changes—only its outfit does!

## Key Concepts & Quick Review

**Fraction** → **Decimal**: divide numerator  $\div$  denominator. **Decimal** → **Percent**: multiply by 100 (move decimal 2 right, add %).

**Percent** → **Decimal**: divide by 100 (move decimal 2 left).  
simplify.

**Percent** → **Fraction**: write over 100,  
 $75\% = \frac{75}{100} = \frac{3}{4}$



## Examples

① Convert  $\frac{5}{8}$  to a decimal and then to a percent.

**Think It Through:** Start by changing the fraction to a decimal:  $5 \div 8 = 0.625$ . To change a decimal to a percent, multiply by 100, which is the same as moving the decimal point two places to the right. So 0.625 becomes 62.5%. That means  $\frac{5}{8} = 0.625 = 62.5\%$ . These are just three different ways to name the same amount.

**Answer:** 0.625; 62.5%

② On a 25-question test, a student answers 18 questions correctly. Express the student's score as a fraction, a decimal, and a percent.

**Think It Through:** The fraction is  $\frac{18}{25}$  because the student got 18 correct out of 25. To write it as a decimal, divide:  $18 \div 25 = 0.72$ . Then convert the decimal to a percent by multiplying by 100, giving 72%. So the score can be written as  $\frac{18}{25} = 0.72 = 72\%$ . When you switch forms like this, the value stays the same even though the look changes.

**Answer:**  $\frac{18}{25} = 0.72 = 72\%$



### Practice Problems

Convert fractions to decimals (1–8), decimals to percents (9–14), and the percent in problem 15 to a fraction in simplest form.

1.  $\frac{1}{4} =$  \_\_\_\_\_

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

3.  $\frac{7}{8} =$  \_\_\_\_\_

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

5.  $-\frac{3}{4} =$  \_\_\_\_\_

6.  $\frac{11}{20} =$  \_\_\_\_\_

7.  $1\frac{3}{4} =$  \_\_\_\_\_

8.  $\frac{5}{6} =$  \_\_\_\_\_

9.  $0.45 =$  \_\_\_\_\_

10.  $0.08 =$  \_\_\_\_\_

11.  $1.25 =$  \_\_\_\_\_


12.  $0.006 =$  \_\_\_\_\_

13.  $0.375 =$  \_\_\_\_\_

14.  $-0.7 =$  \_\_\_\_\_

15.  $30\% =$  \_\_\_\_\_

### Study Tips

 Memorize key benchmarks:  $\frac{1}{4} = 0.25 = 25\%$ ;  $\frac{1}{3} \approx 0.\bar{3} \approx 33.\bar{3}\%$ ;  $\frac{1}{2} = 0.5 = 50\%$ ;  $\frac{3}{4} = 0.75 = 75\%$ .

 **Decimal ↔ Percent:** just move the decimal point 2 places. Right for decimal → percent, left for percent → decimal.

 A percent greater than 100% corresponds to a decimal greater than 1:  $125\% = 1.25$ .

### Word Problems

16. A store marks all items down by  $\frac{3}{8}$  of the original price during a sale. A jacket originally costs \$64.00. Express the discount as a decimal and as a percent. Then find the sale price of the jacket. Finally, a sales tax of 8% is added to the sale price — write 8% as a decimal and find the final price including tax. \_\_\_\_\_

17. In a class of 32 students,  $\frac{5}{8}$  passed a quiz with a score above 80%. How many students passed? Express the passing rate as a percent and as a decimal. Of the students who passed, 60% scored above 90%. How many students scored above 90%? \_\_\_\_\_



## Answer Keys

- |                 |  |
|-----------------|--|
| 1) 0.25         | 11) 125%   |
| 2) 0.6          | 12) 0.6%   |
| 3) 0.875        | 13) 37.5%  |
| 4) $0.\bar{3}$  | 14) -70%   |
| 5) -0.75        | 15) $\frac{3}{10}$   |
| 6) 0.55         | 16) Discount 37.5%; sale price \$40; tax rate 8%;<br>final price \$43.20 |
| 7) 1.75         | 17) 20 students passed; rate 62.5%; above 90%:<br>12 students            |
| 8) $0.8\bar{3}$ |  |
| 9) 45%          |  |
| 10) 8%          |  |

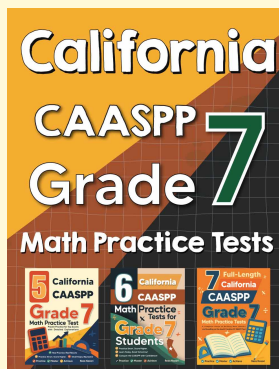
### Step-by-Step Explanations

*Tutoring notes not found for this topic.*



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