

Converting Between Fractions, Decimals, and Percents

Name: _____

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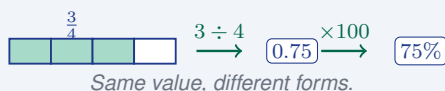
Think of fractions, decimals, and percents as three disguises for the *same* number—once you can switch freely among them, problems become much easier to solve! A **percent** simply means “per hundred,” so 25% is the same as $\frac{25}{100}$ is the same as 0.25. You will use this skill everywhere: store 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%;
final price \$43.20 |
| 7) 1.75 | 17) 20 students passed; rate 62.5%; above 90%:
12 students |
| 8) $0.8\bar{3}$ | |
| 9) 45% | |
| 10) 8% | |

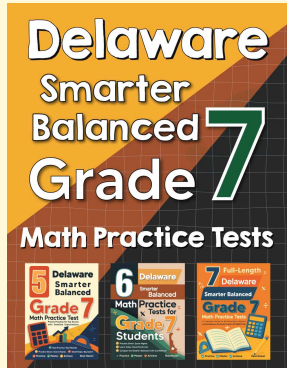
Step-by-Step Explanations

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