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Unit 3: Percents STUDY GUIDE
Percent, Tax, Tip, Discount,Commision, Percent of Error/Change, Simple Interest
Percent Proportion

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$$\frac{is}{of} = \frac{\%}{100} \text{ or } \frac{part}{whole} = \frac{\%}{100}$$

<div align="center">Percentage formula</div>

1. What percent of 12 is 7?	3. 25 is 55% of what number?
2. Manuel found a wrecked Trans-Am that he could fix. He bought the car for 65% of the original price of $7200. What did he pay for the car?	4. The Royals softball team played 75 games and won 55 of them. What percent of the games did they lose?

Steps: **Tax, Tip and Markup**
1. **Convert Percent to Decimal**
2. **Multiply Decimal and Original Price**
3. **Add to Original Price**

5. Your parents took your family out to dinner. Your parents wanted to give the waiter a 15% tip. If the total amount of the dinner was $42.00, what is the total cost of the bill?	8. If the sales tax for the city of Los Angeles is 9.75%, how much tax would you pay for an item that costs $200.00?
6. If you go out to eat with 3 friends and your meal was $72.50, there is 6.75% sales tax and you should tip the waiter 15%. How much should each person pay?	9. The Oates family went out to dinner. ● The price of the meal was $33.95. ● The sales tax was 7.25% of the price of the meal. ● The tip was 15% of the meal and the sales tax. How much money did the Oates family pay for the meal, including tax and tip?
7. The cost price of a book is $8. Find the selling price of the book if the store's markup is 36%.	10. A store sells school bags for $17.10 each. At what price should the store sell each bag, if the price needs to be marked up by 30%?

Steps: **Commission**
1. **Convert Percent to Decimal**
2. **Multiply Decimal and Original Price**

11. A real estate agent receives a 3% commission for selling a house. Find the commission that the agent earned for selling a house for $131,000.	12. The owner of the Carousel Art Gallery receives a commission of 20% on paintings that are sold on consignment. Find the commission on a painting that sold for $22,500.

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Steps: Discount and Markdown
1. **Convert Percent to <u>Decimal</u>**
2. **<u>Multiply</u> Decimal and Orginal Price**
3. **<u>Subtract</u> from Original Price**

13. A football is selling for 35% off the original price. The original price was $60. What is the sale price of the football?	15. ▢A ▢motorcycle▢ that ▢regularly ▢sells ▢for▢ $1,450▢ was ▢discounted ▢by ▢40%▢ off.What is the sale price before tax?
14. Timmy wants to buy a scooter and the price was $50. When he goes to the store a second time, he found that price was marked down by 20%. What is the new price?	16. A supermarket has marked down all items at 35 percent. Jeremy wants to buy a digital camera that regularly sells for $55 and iPad that regularly sells for $280. Determine the total sale price.

Percent of Change and Percent of Error

$$\frac{Difference}{Original} = \frac{\%}{100}$$

$$\frac{Difference}{Actual} = \frac{\%}{100}$$

17. In 1967, a 30-second Super Bowl commercial cost $40,000. In 2000, a 30-second commercial cost $1,800,000. What was the percent of change in the cost of a commercial?	20. Dennis wants to buy a card for his wife. Dennis calculates the amount of the card as $4.50. The actual price of card is $4. What is Dennis's percent error?
18. Shannon had 765 cards in her baseball collection. She sold 153 of the cards to purchase a new iPod. What is the percent of change in the number of Shannon's baseball card collection?	21. Sabrina calculates the cost of a book as $50. The actual price was $56. What is Sabrina's percent error?
19. Caroline, an employee of Hollister, bought a sweater originally priced at $55 for $38.50 after her employee discount. What percent off is the employee discount?	22. Joshua uses his thermometer and finds the boiling point of ethyl alcohol to be 75° C. He looks in a reference book and finds that the actual boiling point of ethyl alcohol is 80ºC. What is his percent error?

Simple Interest

$I = P \times R \times T$ Where: I = the Interest Money created in dollars P = the "Principal" starting amount of money R = the Interest Rate per year (in decimal form) T = the Time the money is Invested, or Borrowed, in Years	23. Principal = $47,300, Rate = 3%, Time = 4 months. What will that total principal + interest payment be?
	24. Richard deposited $5,500 for 6 years on 2.40% interest rate in his saving account. How much simple interest will he earn?
	25. Andrew borrows $79,500 for 5 months on 6.30% interest rate in his saving account. Calculate the simple interest?

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