

Simple Interest on Your Savings #15

Percent, multiplication, order of operations

Saving money at a bank or other institution allows you to store your money with someone else. The money that you earn for doing this is called interest. Interest is a percentage of the amount you have deposited. Simple interest is only calculated on the principal amount of money invested or borrowed. For example: Joan put \$1000 in the bank and she is going to gain 3% simple interest on her money over three years. She will make \$30 each year.

The formula for simple interest is **Interest = Principal x rate x time or $I = Prt$**

The formula for the total amount owed (interest plus the principal amount) is:

$$A = \text{Principal} (1 + \text{rate} \times \text{time}) \quad A = P(1 + rt)$$

A is the final amount including the principal.

P is the principal amount.

r is the rate of interest per year.

t is the number of years invested.

1 is the number one

Example 1: Lisa saves \$1500 at 3% simple interest. She has it in the bank for two years.

Problem: How much interest will Lisa receive in two years?

Solution: Step 1: The interest rate must be converted into a decimal: $3\% = .03$

Step 2: Interest = $\$1500 \times .03 \times 2 \text{ years} = \90

Lisa will get \$90 in interest after two years.

Example 2: Craig puts \$3000 in the bank. The bank offers a simple interest of 2.5% per year.

Problem: How much will he have after 2.5 years?

Solution: Step 1: The interest rate must be converted into a decimal: $2.5\% = .025$

Step 2: Use the formula to calculate the end amount after 2.5 years:

$$A = P(1 + rt)$$

$$A = \$3000 (1 + .025 \times 2.5) = \$3187.50$$

Craig will have \$3187.50 after 2 ½ years.

Part 1: Answer the questions below about simple interest.

1. The amount that you earn when you invest your money:

- a) Interest
- b) Term
- c) Principal
- d) Rate

2. The amount of the original investment is called:

- a) Interest
- b) Term
- c) Principal
- d) Rate

3. The three elements used to calculate simple interest are: _____

Saving Money

Part 2: Calculate the simple interest for the following:

4. Principal amount = \$4000
Interest rate = 4%
Time = 3 years

5. Principal amount = \$2500
Interest rate = 5%
Time = 2 years

6. Principal amount = \$10,000
Interest rate = 4%
Time = 4 years

7. Principal amount = \$8000
Interest rate = 1.9%
Time = 6.5 years

8. Principal amount = \$15,000
Interest rate = 2.3%
Time = 6 months

9. Principal amount = \$3500
Interest rate = 2.8%
Time = 2.5 years

10. Principal amount = \$5000
Interest rate = 1.3%
Time = 9 months

11. Principal amount = \$2000
Interest rate = 4.3%
Time = 18 months

Part 3: Solve the following simple interest problems.

$$\text{Interest} = \text{Principal} \times \text{rate} \times \text{time} \text{ or } I = Prt$$

$$A = \text{Principal} (1 + \text{rate} \times \text{time}) \text{ or } A = P(1 + rt)$$

12. Susan invests \$5000. She is getting 4% simple interest over 4 years. How much interest will Susan earn after 4 years?

13. How much money will Susan have after 4 years?

14. Larry invests \$10,000 in stocks. The bank will give him 6% simple interest for 5 years. Larry decides to pull out his money in 3 years. How much money will he have?

15. Donna invests \$500 for a one year period. At the end of the year, she earns \$50 in interest. What was the interest rate on the principle amount?

16. Henry invests \$5000 in a mutual fund with an annual interest of 7.5%. How much money will he have in one year?

17. How much interest does a \$10,000 investment earn at 5.6% over 18 years?

18. How long would it take to have \$7650 if your principal amount was \$5000 with a 12% interest rate? Round your answer to one decimal place.
