

## The Learning Center

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### Simple Compound Interest Work Problems Math 050 and Math 120

Name \_\_\_\_\_ Simple/Compound Interest Review

1. Sharky's short term loan company charges \$25 to borrow \$300 for 1 week. What is the annual rate of simple interest?
2. Nicky is saving to buy a new convertible. She has deposited \$10,000 into a CD account at a rate of 4% simple annual interest. How long will she have to wait in order to buy her dream convertible priced at \$16,995? Is this realistic?
3. Hannah wants to save enough money for horseback riding camp. The cost of the camp is \$250 per week. If she has already saved \$225 and her parents promise her a rate of 20% simple interest, how long will it take her to save to reach her goal?
4. The Simpson's are trying to save enough for a down payment on a new home. They can earn 6.4% compounded quarterly in a money market account. They plan to purchase the home 4 years from now and the down payment needed is \$10,000. How much do they need to deposit today to reach their goal?

5. A rent-to-own company offers a complete home entertainment system for 48 easy payments of \$29.95. If you can purchase the system for \$895 without buying it on credit, what is the annual rate of simple interest which is being charged?
  
6. Your rich Aunt Bertha plans to leave her entire estate to you. If her estate is valued at \$100,000 and you can invest the entire proceed at 8.25% compounded semi-annually, what would the estate be worth in 10 years?
  
7. You need to take out a loan to finance your \$2500 spring break trip to Cancun. If the rate of simple interest is 15.9% for 2 years, what is the actual cost of the trip including interest?
  
8. An account balance of \$750 is charged an interest fee of \$45.  
If the rate of simple interest is 24%, how long was the interest accruing?
  
9. In order to purchase a new Karaoke machine you will need to save \$4800. If you can invest in an account paying 8.4% compounded monthly for 60 months, how much will you need to invest today in order to purchase the machine?
  
10. Your comic book collection is valued at \$3000. If you know the collection appreciates at a rate of 10% per year compounded annually, how much will the collection be worth 25 years from now?

**Answers:**

1. 433.33% annual simple interest
2. 17.5 years
3. 55 years –approx. 6 months
4. \$7757.12 need to be deposited
5. 15.16 % annual simple interest
6. \$224,440.01 is the value of the estate in 10 years
7. \$3295 – total cost of the trip
8. .25 years =  $.25 \times 360$  days/per year = 90 days
9. \$3158.44 is the needed investment
10. \$32,504.12 is the value of the comic collection