Your name:

Test 4, January 26, 2022 ANSWERS

The test lasts half an hour. Show your work. A compound interest table is attached.

1. What is 60.5% as a decimal? *0.605*

2. What is 37.5% as a fraction? *3/8*

3. What is 0.45% as a decimal? *0.0045*

4. Six gallons of exterior paint costs $155.00 plus sales tax of 6%. What is the total cost?
*The part is the tax and the whole is the paint cost of $155. The amount of tax is thus Tax = 0.06*$155 = $ 9.30. The question asks for the total cost, which is $155 + $9.30 = $164.30.*

5. Suppose the price of a computer is $1,000 plus 6.5% sales tax. How much will it cost?
*The part is the tax and the whole is the price. The amount of tax is thus 0.065*$1,000 = $65.00. The total cost is $1,000 + 65 = $1,065.00.*

6. A car company pays by commission. Joe earned a commission of $500 last week on sales of $2,500. What is the commission rate?
The part is the commission of $500 and the whole is the sales of $2,500. Thus, $500 = Percent$2,500 and $500/$2,500 = Percent, which is 0.20 or 20%.*

7. If a Honda SUV is offered at 12% off the suggested retail price of $34,500, what is the amount of the discount?
*The amount of the discount is the part and the price is the whole. Thus, Discount = 0.12*$34,500 and Discount = $4,140.*

8. Someone got a discount of 15% off the original price for an engine repair, and that saved him $132. What was the original price?
*The amount of the discount is the part and the original price is the whole. Thus $132 = 0.15*Price, so $132/0.15 = Price so $880 = price.*

9. You pay an 8% simple interest rate on a loan of $3,000 for 2.5 years. How much interest do you pay?
*The Interest = rate*principal*years = 0.08*$3,000* 2.5 = $600.*

10. 40 pillows is 5% of what number of pillows?
The part is the 40 pillows and the whole is the number we are looking for as an answer. Thus, 40 =0 .05(Number of pillows) so*
40/0.05 = Number of Pillows, which is 800.

11. You are selling your house and your broker offers you a choice of a commission rate of 6% or a fixed commission of $10,000. What price of house makes the two commissions equal? (round to the nearest dollar)

*The first commission is .06*Price and the second commission is $10,000. If they are equal, we have*
*.06*Price = $10,000, so*
Price = $10,000/.06 = $166, 667

12. In 2022, your investment of $1,000 in the stock market goes down 10% in value. In 2023, your investment goes up 10% in value. How much do you end up with?

*The first year your investment decreases by .10*$1,000 = $100, so you are left with $900. The second year, the $900 goes up 10% in value, which is .10*$900 = $90. Thus, you end up with $900+ $90 = $990.*

13. If shipping costs add 8% to an order, and you order two birdfeeders from Ace Online at $34.88 each, what is the total amount you end up paying? (round to the nearest cent)

*The price of two birdfeeders is 2*$34.88= $69.76.*
*The shipping cost adds 8% to the order, so it adds .08*$69.76 = $5.58.*
The total is $69.76 + $5.58 = $75.34.

14. Sam lends $3,000 to Mary for 8 years at an interest rate of 3.5%, compounded annually. How much does Mary pay back Sam at the end of the 8 years?

The principal is $3,000, and from the compound interest table, this multiplies by 1.3168 to get the compounded amount, $3,950.40. That is how much Mary pays back Sam.

15. I borrow $4,000 at 2.5% interest, compounded annually, for 7 years, how much interest do I pay?

The principal is $4,000, and from the compound interest table, this multiplies by 1.1887 to get the compounded amount, $4,754.80. That is the compounded amount, but it includes principal as well as interest. The interest is $4,754.80 - $4,000 = $754.80.

Bonus questions.

B1. Suppose you earn compound interest of 11% on an investment of $2,000 for three years. How much interest is earned each year?

*The interest the first year is .11*$2,000= $220.00. We add this to the original $2,000 to get $2,220.*
*The interest the second year is .11*$2220 = $244.20. Adding this to the $2,220 gives us $2,464.20.*
*The interest the third year is .11 * 2,464.20 = $271.06.*

B2. Suppose you want to have $3,000 to spend in 4 years, and you can invest money now and earn 5%, compounded annually. How much do you need to invest now? (round to the nearest dollar)

*You want the compounded amount to equal $3,000, and from the compound interest table, this will be 1.2155 times the principal. Thus, $3,000 = 1.2155*Investment, and*
Investment = $3,000/1.2155 = $2,468.