Spring 2019

Please read each problem twice. Then create an equation that would help you solve the problem. Make sure you answer the question asked!

1) Katrina is saving for a motorcycle. The price of the motorcycle with tax is $17,000. If she can save $700 per month, how long will it take her to save enough money?

2) Jake wants to buy a guitar on an installment plan that requires a 19% down payment and $19.50 per month for 13 months. If the guitar cost $194, what will Jake pay in **finance charges**?

3) The average daily balance on Phuong-Trin's credit card for last month was $1,234. If the APR on this account is 22.5%, what is the finance charge for the month?

4) My Vo buys a $3000 plasma TV using an installment plan that requires an 15% down payment. How much is the down payment?

5) The following is Angie Ceja's credit card summary

Previous Balance	Payments/ Credits	New Purchases	Late Charge	Finance Charge	New Balance
$1,650.25	$440.00	$620.40	$0.00	$18.32	

What is Angie's new balance?

6) Alayna is buying a $24,300 car at 5.5% interest for 4 years. What is her monthly payment?

7) Cris is taking out an $9,500 four-year loan with an APR of 4.5%. What is her *monthly* payment for this loan?

8) Ashley Norzagaray didn't pay her credit card in full in March, so her April bill has a finance charge added on. The average daily balance was $820.00 and the APR is 16.3%. What will the finance charge be on her April statement?

9) Here is a summary of daily balances on Emmaleen's credit card statement.

        6 days x $1,078.21
        11 days x $1,200.11
        10 days x $1,167.10
        3 days x $1,259.09

      If the APR on her account is 18.8%, what is the finance charge for the month?

10) Bryanna wants to invest $22,000 for one year. She puts some of the money in to an investment account that pays 6% interest. She puts the rest in to a certificate of deposit that pays 4%. If the total interest earned on both accounts at the end of the year is $1,550, how much did she invest in the account that pays 6%?

11) Cameron purchased a used 5 year old car for $11,000. This car has depreciated exponentially over the last 4 years at a rate of 5.8% per year. What was the approximate original price of the car?

12) Sarina bought a new car for $30,000. If the car exponentially depreciates at a rate of 6.0% per year, how much will this car be worth in 8 years?

13) You are purchasing a 3 year-old used car. If the current price is $13,500 and has historically depreciated at a rate of 10% per year, how much did the car cost when it was new? (*assume exponential depreciation*).

14) Abraham is buying a car. If sales tax is 9.1%, how much will he pay for the car that has a sticker price of $19,500?

15) You bought a new car 5 years ago. This car loses all marketable value after 10 years. If the purchase price was $17,000, how much is it worth today? (*Assume straight-line depreciation*)

16) Kirianna purchased a new car for $22,350. This particular car loses all marketable value in 12 years. Assuming this model depreciates in a linear fashion (straight line depreciation), how much will it be worth after 5 years?

17) Cayla deposits $3,000 in to an account that pays 7% interest compounded semiannually. What is her balance after 4 years?

18. You bought a new car for $15,600. The historical depreciation rate for this particular car has been 12% per year (assume exponential depreciation). In how many years will this car be worth $9,000?

For questions 19-22, use the following information.
AnaSofia wants to buy a $22,200 car. The sales tax is 9.2%. She makes a down payment of $1,200 and finances the rest over 4 years at 6.2% interest. Her semiannual insurance premium is $600 and includes liability and collision coverage. The car she is buying averages 22 miles per gallon. She drives 950 miles per month on average. Gas costs $2.10 per gallon on average.

19) What is her monthly car payment?

20) What is her monthly insurance payment?

21) How much will she spend, on average, for gas each month?

22) What is the monthly cost of owning this vehicle?

23) Antonio purchases a brand new car for $27,000. This vehicle loses all marketable value in 18 years. How much value does Antonio's car lose each year if it depreciates using straight line depreciation?

24) Robert is looking for a job as a motorcycle mechanic. One job pays a salary of 23.8k annually. The other pays an hourly wage of $14.35 per hour. If he works 40 hours per week, 52 weeks out of the year, which job pays more and by how much?

25) Brizeda gets a 25% commission on sales of turtles at Pet Universe. She sells, on average, 14 turtles per day. Turtles cost $14.00. If she works 36 hours in 5 days this week, how much does she get paid in turtle sales commissions?

26) Mia is looking for a job as a purchasing manager. One classified ad lists a job in a restaurant that pays $32,500 annually. Another job, in a clothing store, advertises as paying a weekly salary of $650. Assuming that she works 52 weeks per year, which is the higher paying job?

27) Elisandro works a 45 hour work week. Any time he works over 40 hours in a week, he gets paid time-and-a-half overtime pay. If Elisandro makes $9.50 per hour, what is his weekly pay for this week?

28) Syerra gets 3 days of paid vacation at her company. After four years, they add 2 additional vacation days per year up to a limit of 20 vacation days. How many vacation days per year will she have after 8 years?

29) Alondra worked a regular 40 hour week plus 9 hours of overtime (time-and-a-half). If her gross pay for this one week period is $450, what is her regular hourly wage?

30) Danitza wrote a children's book. She gets a 8% royalty based on the number of copies sold. Books sell for $7 each. If 15,000 copies were sold last month, what will she get paid in royalty payments for the month?

31) Anthony makes $9.00 per hour and works 36 hours this week and 39 hours next week. By how much will his biweekly paycheck be reduced for FICA AND Medicare?

32) Alejandro earns $12 per hour. His normal work week is 40 hours. He receives time-and-a-half for each hour he works above that amount. How much would he be paid for a week in which he works 47 hours?

33) Aileen sells miniature pot belly pigs. She gets a 14% commission on the first $800 per month of sales and 18% on the remaining balance of sales. If her total sales for the month of January was $4,500, how much will she make in commissions?

34) How much income tax will Adam owe if he makes $99,050 per year and files as a single person? In calculating his taxable income, he elects to take a standard deduction of $7,650.

35) You have to pay 14% of your annual health insurance premium and your employer pays the remaining balance. If the premium is $4,280 per year how much will you be paying this year for health insurance?

36) Your employer pays 82% of your health insurance premium. If the total premium is $7,520 per year, what will be your biweekly contribution?

37) You plan on working for your employer for 30 years because they offer a pension. **What percent** of your average annual salary will you receive if you get 1.9% of the average of your last 3 year's salary for every year you have worked?

38) Working for GloboGym, you can earn a pension after 25 years of service equal to 2.2% of the average of your last three years' salary for each year that you worked for the company. You work there for 26 years. Your last three years' salary is: $42,500, $45,100, $46,230.
What will be the amount of your annual pension?

39) You make $8.75 per hour and work 37 hours per week. How much will each **bi-weekly** paycheck be <u>reduced</u> by FICA and Medicare taxes combined?

40) You make $8.10 per hour and work 39 hours this week and 36 hours next week? What will be the amount of your **bi-weekly** paycheck after Fica and Medicare taxes have been deducted from your gross pay?

41) Find the distance between (-2,5) and (2,6).

42) Find the equation of the line that passes through (-3,4) and (1,8).

43) Solve this system of equations. $4x + 5y = 32$
                                               $2x - 3y = -6$

44) Solve this quadratic equation.

$$4x^2 - 2x - 12 = 0$$

45) Find the surface area of a rectangular prism whose base is 5 cm by 8 cm and whose height is 10 cm.

46) Find the 20th term in this sequence.

      4, 10, 16, 22, 28,…

47) Find the difference between the median and mean of the following test scores.

$$85, 79, 56, 92, 76, 83, 62$$

48) Add.

$$3\frac{3}{4} + 2\frac{1}{3}$$

49) Simplify this rational expression.

$$\frac{x^2 + 7x + 12}{x^2 + 5x + 6}$$

50) Find the approximate height that a 12 foot ladder can reach up a wall if you set it on the ground 5 feet away from the edge of the wall. *The cosine of a 65 degree angle is approximately .4226.*