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QR PROJECT 8 FINANCES

***Must show calculations/formula for credit. Any answer given with no calculations/descriptions of how arrived at answers shown will result in no credit for that answer. If utilizing excel must state/describe your formulas used and your inputs***

I strongly suggest you use excel for this project. The calculations are accomplished much simpler, quicker, and more accurate than doing the formulas by hand. The video embedded in your Canvas course provide a step by step process of how to go about it.

1. The following chart is data over an 8 month period that shows how much a company spent in advertising and the sales revenue for that month

|  |  |  |
| --- | --- | --- |
| MONTH | ADVERTISING $ | SALES $ |
| March | 900 | 56000 |
| April | 2700 | 89200 |
| May | 3150 | 98500 |
| June | 1300 | 54000 |
| July | 3400 | 97000 |
| Aug | 1500 | 56000 |
| Sept | 2300 | 93000 |
| Oct | 2250 | 79000 |

a)What is the correlation coefficient? (round to 2 decimals) ***describe how you utilized excel to arrive at this number (recommended) or show the formula you utilized to arrive at this answer***

b) Is it a positive or negative correlation?

1. Would you say it is a strong correlation, weak correlation or no correlation? What is the indicator that lead you to that conclusion?
2. What is the linear equation (y = mx + b form) that best approximates the relationship between advertising dollars spent(x) and sales revenue(y) based on the above 8 months of data? (round to 2 decimals for the slope and the y intercept) ***describe how you utilized excel to arrive at this equation (recommended) or show the formula you utilized to arrive at your equation***
3. What sales revenue would the company expect for the following advertising spending? Round to nearest cent **show calculation**
4. 3000
5. 2100
6. 1300
7. If you were in charge of the advertising department how much would you spend on each of the next 4 months on advertising and how and why did you arrive at your decision?

Nov

Jan

Feb

March

Please give a short explanation as to how and why you came up with your advertising spending for the above 4 months.

Example : You want to buy a $18,500 car. The company is offering a 3% interest rate for 4 years.

What will your monthly payments be?

**I will do this one for you and show you how I want you to describe your formula/inputs in excel if that is how you choose to go about solving problems 2 through 5 - which I strongly recommend. If you choose to perform the calculations by hand show the formula used with values.**

**Excel:**

**Formula used: PMT**

**Rate input: .03/12**

**NPer input: 4\*12**

**Pv input: 18500**

**Answer : $409.49 per month**

1. You want to buy a $22,500 car. The company is offering a 4% interest rate for 5 years.
   1. What will your monthly payments be? Round to the nearest cent.
   2. Assuming you pay that monthly amount for the entire 5 years, what is the total amount of money you will pay during those 5 years for the car?
   3. How much interest will you pay during those 5 years?
2. You have $400,000 saved for retirement. Your account earns 6% interest. How much will you be able to pull out each month, if you want to be able to take withdrawals for 25 years?
3. You deposit $600 each month into an account earning 4% interest compounded monthly.  
     
   a) How much will you have in the account in 12 years?

b) How much total money will you put into the account?

c) How much total interest will you earn?

1. Suppose you want to have $700,000 for retirement in 25 years. Your account earns 9% interest.  
     
   a) How much would you need to deposit in the account each month?

b) How much interest will you earn?

1. You deposit $2100 in a savings account paying 5.5% simple interest. ***The solution to this problem is not accomplished by an excel formula. Use the formula I = PRT where T is in years***  
     
   a) How much interest will you earn in 18 months?

b) How much will be in your account at the end of 18 months?