

1.) How many terms were added together for a geometric series whose first term is 4, common ratio is 3, and sum is 1,062,880?

2.) What is the sum of an arithmetic series whose eleventh term is 75, seventeenth term is 117, and last term is 236?

3.) Hank is trying to create a password for his phone. The password can be 5 characters. The first two characters must be letters, the middle character must be a number, and the last two characters must be a vowel. The characters of the password cannot repeat. How many different passwords can Hank make?

4.) Cammie has a bag of marbles containing 4 red, 3 yellow, 2 green, and 5 blue. She selects 2 marbles at random. Which scenario has a greater chance of happening?

a.) Selecting a yellow and then a blue, no replacement.

b.) Selecting two yellows or two blues.

5.) A class has test scores: 76, 52, 82, 95, 76, 92, 99, 85, 89, 64, 78, 82, 76, 95. What are the measures of central tendency?

6.) A class has exam scores that are normally distributed with a mean of 86 and a standard deviation of 3. Twenty-three of the students scored between 83 and 95. How many students took the exam?

7.) Nora wants to invest \$1400 into an account that has a 4.3% interest rate and the account is compounded continuously. How long will it take for the account to be \$3850?

8.) Given the piecewise function:

$$f(x) = \begin{cases} 2x + 4 & \text{if } x \leq -2 \\ 3 - x^2 & \text{if } x > -2 \end{cases}, \text{ find } f(6) + 2f(-4).$$

9.) The table below shows the outstanding household credit market debt (in trillions of dollars) from 1998 through 2004. A linear model best models this data. What will be the debt in the year 2018?



Year	Household credit market debt, D (in trillions of dollars)
1998	6.0
1999	6.4
2000	7.0
2001	7.6
2002	8.4
2003	9.2
2004	10.3

10.) The table shows the numbers N of commercials banks in the U.S. from 1996 to 2005, where $x = 6$ for 1996. A logarithmic model best models this data. In what year will the number of banks drop to 5,300?



Year	Number, N
1996	9527
1997	9143
1998	8774
1999	8580
2000	8315
2001	8079
2002	7888
2003	7770
2004	7630
2005	7540