**MCR3U UNIT T 7 REVIEW– SEQUENCES AND SERIES**

|  |  |
| --- | --- |
|  |  |

1. Beside each sequence, write the next term and then state whether it is arithmetic, geometric, or neither.

 a) 100, 50, 25, . . . \_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ b) 50, 60, 70, . . . \_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 c) 1, 2, 3, 5, . . . \_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ d) 1, 8, 15, . . . \_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write a general formula for the sequence -3, -8, -13, -18, . . .
2. Write a recursive formula for the sequence 2, 3, 6, 18, 108, …
3. Martina has won the grand prize in “Cash Forever” lottery. She will receive $5,000 the first year and receive an annual increase of $300 each year, on top of the $5,000 annual payment.
4. Write the first 4 terms of the sequence of her annual payment.
5. Determine the general term of this sequence. Find her annual payment in the tenth year.
6. In which year should Martina expect her payment to be $10,400? (Use appropriate concept(s) learned in this chapter to answer this question)
7. Is there a year where Martina’s payment will be $20,000? Explain.

(Use appropriate concept(s) learned in this chapter to answer this question)

1. A ball is dropped from a height of 8 feet.  The ball bounces to 80% of its previous height with each bounce.  Write the general term and use it to find how high (*to the nearest tenth of a foot*) does the ball bounce on the fifth bounce.
2. Explain how you can determine number of terms for the sequence: 6, 17, 28, 39, … , 435? Find n.
3. If in a geometric sequence, determine the value of ‘a’ and ‘r’.

1. Find for the following series.
2. b)
3. Evaluate
4. b)
5. A lottery plans to give out $5,000,000 in prizes. The first ticket drawn wins $20, the second ticket drawn wins $50, the third ticket drawn wins $125, and so on. Can the lottery afford to give out 14 prizes?
6. What is difference between two formulas for geometric series?
7. The arithmetic series has a sum of 931. How many terms does the series

 have?

1. Expand each of the following:
2. b.