Review Unit 6 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Secondary III Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_

Write an explicit and recursive rule for the following

1. 9, 27, 81, 243,… 2. 4, **–**3, **–**10, **–**17, ...

 Explicit: Explicit:

 Recursive: Recursive:

3. Find the 12th term of the geometric sequence 5, 15, 45,…

4. If the first three terms of a geometric sequence are 3, 12, and 48, what is

the seventh term?

Find the stated term for the following sequences

**5. –**3, **–**6, **–**12, **–**24, ...; 9th term 6. 4, **–**12, 36, **–**108, ...; 11th term

**Find the sum of the geometric series.**

7. 4 **+** 16 **+** 64 **+** ... **+** 4096 8. 3 **–** 6 **+** 12 **–** 24 **+** ... **768**

9. **–**2 **–** 6 **–** 18 **–** 54 **–** 162 10. **–**2 **+** 8 **–** 32 **+** ... **+**2048

Evaluate the following

11.  12. 

13. A geometric sequence that has an initial value 2, ends with -4374 and has a common ratio of -3, how many terms are in the sequence?

Find the domain and range for the following functions

14.  15. 

Domain: Domain:

Range: Range:

Graph the following and label any asymptotes or intercepts

16.  17. 



18. If Jane invests $4,200 at an 8% interest **compounded continuously**, how much money will there be after 10 years?

Answer #19-21 with the following: an investment of $2000 that earns 3.4% interest

19. Write an equation to describe the value A(t) of the investment at time t if the interest is **compounded monthly**.

20. What is the value of the investment after 10 years if compounded **monthly**?

21. About how long would it take for the investment to reach $10,000 if the interest is **compounded monthly**?

22. A melting snowman is losing one-half of his weight each day. He originally weighed 128 pounds. Assuming that the outside temperature stays the same, how much does the snowman weigh after 5 days?

23. A car with a cost of $25,000 is decreasing in value at a rate of 10% each year. The function  gives the value of the car after *t* years. When will the value of the car be about $12,000?

24. The population of a town was estimated to be about 5000 in 1980. The exponential growth function that models this situation is  where *t* is the time in years after 1980, and *P*(*t*) is the population at time *t*.

a. What is the initial amount?

b. What is the population after 20 years?