Secondary 1 Honors ~ 5.2 Geometric Sequences

Name: _____ Period: _____

Complete each table to continue the pattern.

1.

Term	1st	2nd	3rd	4th	5th	6th	7th	8th
Value	2	4	8	16	32			

2.

Term	1st	2nd	3rd	4th	5th	6th	7th	8th
Value	-3	9	-27	81				

3.

Term	1st	2nd	3rd	4th	5th	6th	7th	8th
Value	160	80	40	20				

Identity the following sequences as arithmetic, geometric, or neither.

4. 2, 4, 7, 11, 16, … _____

5. 60, 55, 50, 45, 40, … _____

6. 1, 7, 13, 19, 25, … _____

7. 5, 25, 125, 625, … _____

8. 200, 100, 50, 25, … _____

9. 5, 6, 10, 11, 20, … _____

For each of the following geometric sequences, identify a reasonable starting value and the common ratio. Then, write the recursive and explicit formulas.

10. 5, 25, 125, 625, …

Starting Value _____

Common Ratio _____

Recursive _____

Explicit _____

11. 2, 10, 50, 250, …

Starting Value _____

Common Ratio _____

Recursive _____

Explicit _____

12. 3, 12, 48, 192, …

Starting Value _____

Common Ratio _____

Recursive _____

Explicit _____

13. 200, 100, 50, 25, …

Starting Value _____

Common Ratio _____

Recursive _____

Explicit _____

14. -4, -8, -16, -32, …

Starting Value _____

Common Ratio _____

Recursive _____

Explicit _____

15. $\frac{1}{3}, \frac{1}{6}, \frac{1}{12}, \frac{1}{24}, \ldots$

Starting Value _____

Common Ratio _____

Recursive _____

Explicit _____

Write the recursive and the explicit rules for the sequences.

16. 60, 55, 50, 45, 40, … Recursive: Explicit:

17. 3, -30, 300, -3000, … Recursive: Explicit:

18. 540, 180, 60, 20, … Recursive: Explicit:

19. 1, 7, 13, 19, 25, … Recursive: Explicit:

Evaluate the following equations, when $x = \{1, 2, 3, 4, 5\}$. *Organize your inputs (domain) and outputs (range) into a table of values for each equation. Let x be the domain and g(x),* $h(x)$, $j(x)$, *or* $k(x)$ *be the range.*

20. $g(x) = 4^x$

x	*y*

21. $h(x) = (-3)^x$

x	*y*

22. $j(x) = -3^x$

x	*y*

23. $k(x) = 10^x$

x	*y*

Solve the following equations for the unknown variable.

24. $3(x-1) = 2(x+3)$

25. $2\left(a - \frac{1}{3}\right) = \frac{2}{5}\left(a + \frac{2}{3}\right)$

26. $3(x+3) - 2(x-1) = 0$