

Chapter 11 Practice Test

Name: _____

Time> Start: _____ Finish: _____ Total Time = _____

Determine if the sequence given is an arithmetic sequence, geometric sequence, or neither. Put A for arithmetic, G for Geometric, and N for neither.

_____ 1. 4, 7, 10, 13, 16, ...

_____ 2. 7, 12, 18, 22, 27, ...

_____ 3. 10, 15, 22.5, 33.75 ...

_____ 4. 160, 144, 129.6, ...

_____ 5. 4, 8, 16, 32, 64, ...

_____ 6. 1.2, 3.7, 6.2, 8.7, 11.2, ...

Find the Explicit Formula for the sequences below. Make sure to determine what sequence type you have. The formulas are

Aritmetic: $a_n = a_1 + (n - 1)d$

Geometric: $a_n = a_1 \cdot r^{n-1}$

_____ 7. 12, 15, 18, 21, 24, ...

_____ 8. 10, 17, 24, 31, 38...

_____ 9. 2, 6, 18, 54, 162 ...

_____ 10. 800, 400, 200, 100, 50, ...

_____ 11. -85, -97, -109, -121, -133, ...

Given the first term and the common difference, find the 30th term of these arithmetic sequences.

_____ 12. $a_1 = 14, d = 4$ _____ 13. $a_1 = -8, d = 20$ _____ 14. $a_1 = -5, d = \frac{1}{2}$

After determining what type of sequence you have, find the 25th term of that sequence.

_____ 15. 4, 23, 42, 61, ...

_____ 16. 2, 5, 12.5, 31.25, ...

_____ 17. 240, 120, 60, 30, ...

_____ 18. 120, 110, 100, 90, ...

_____ 19. .25, 1, 4, 16, ...

_____ 20. -99, -80, -61, -42, ...

In the following Geometric sequences, find the r value to help fill in the two missing blanks.

Geometric: $a_n = a_1 \cdot r^{n-1}$

21. 3, _____, _____, 1536

22. 1296, _____, _____, 6

Calculate the following summations.

_____ 22. $\sum_{n=-1}^2 -3n - 4$

_____ 23. $\sum_{n=6}^8 n^{n-6}$

Below you are given either an arithmetic sequence or geometric sequence.

Find the sum of the first 10 terms after deciding what formula to use.

Arithmetic: $S_n = \frac{n}{2}[2a_1 + (n-1)d]$

Geometric: $S_n = \frac{a_1(1-r^n)}{1-r}$

$S_\infty = \frac{a_1}{1-r}, |r| < 1$

_____ 24. 9, 18, 36, 72, ...

_____ 25. 1200, 600, 300, 150, ...

_____ 26. 2, 12, 22, 32, ...

_____ 27. -90, -88, -86, -84, ...

_____ 28. .25, .50, 1, 2, ...

_____ 29. 2, 53, 104, 155, ...

_____ 30. -90, 180, -360, 720, ...

Determine the sum of the infinite geometric series below.

_____ 31. 90, 45, 22.5, 11.25, ...

_____ 32. 90, 30, 10, $3\frac{1}{3}$, ...

_____ 33. $1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \dots$

_____ 34. 64, -32, 16, -8, ...