**Algebra 2 Sequence/Series Review Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**State if the sequence is *arithmetic*, *geometric* or neither. Then identify the difference or ratio.**

1) $3.2, 3.5, 3.8, 4.1, …$

2) $3, 9, 27, 81, …$

3) $-34, -28, -22, -16, …$

4) $4, -8, 16, -32, …$

**Write the *recursive* and explicit *formula* for the arithmetic sequence, and then find the 14th term.**

5) $2, 13, 24, 35, …$

6) $21, 15, 9, 3, …$

**Find the missing term of the arithmetic sequence.**

7) 23, \_\_\_, 49 8) $a\_{n-1}= -6, a\_{n+1}= -7$

**Write the recursive and explicit formula for the geometric sequence, and then find the 9th term.**

9) $a\_{1}= -1, r=4$

10) $a\_{1}=0.1, r= -2$

**Find the missing term of the geometric sequence.**

11) 2, \_\_\_, 50 12) 9, \_\_\_, 16

**Tell if it is a sequence or series and whether it is infinite or finite.**

13) $3+5+7+9+…$

**Write and evaluate the series.**

14) $10, 25, 40, 55, 70, 85$ 15) $1, 3, 5, …, 15$

**Each series has 6 terms. Evaluate.**

16) $-7-9-11-…-17$ 17) $0+ 0.3+0.6+…+ 1.5$

**18-20, Find the number of terms, the first term, the last term, and evaluate the series.**

$$\sum\_{n=1}^{6}\left(3-n\right)$$

$$\sum\_{n=3}^{6}\left(3n+2\right)$$

$$\sum\_{n=1}^{5}\left(5∙2^{n}\right)$$

**Decide if each geometric series diverges or converges, and tell if it has a sum.**

21) $4+2+1+…$ 22) $4+8+16+32+…$

**Evaluate the series.**

23) $0.2+0.02+0.002+…; S\_{8}$ 24) $40+20+10+…;S\_{10}$

25) $1+\frac{1}{3}+\frac{1}{9}+\frac{1}{27}+…$ 26) $60+30+15+7.5+…$