Algebra 2 

Name_____

## 9.1-9.5 Review B for Test 9

Period____

**Given the first term and the common difference of an arithmetic sequence find the explicit formula.**

1) $a_1 = -23$, $d = 4$

**Find the common difference. Write the explicit formula.  Then use your formula to find the 20th term.**

2) $-26$, $174$, $374$, $574$, ...

**Given a term in an arithmetic sequence and the common difference find the explicit formula.**

3) $a_{23} = -237$, $d = -9$

4) $a_{32} = -122$, $d = -3$

**Given two terms in an arithmetic sequence find the explicit formula.**

5) $a_{14} = 153$ and $a_{35} = 363$

**Find the recursive formula.**

6) $-13$, $-213$, $-413$, $-613$, ...

7) $39$, $49$, $59$, $69$, ...

**Given the recursive formula for an arithmetic sequence find the first five terms.**

8) $a_n = a_{n-1} + 10$
   $a_1 = 11$

**Find the missing term or terms in each arithmetic sequence.**

9) ..., −13, ___, −213, ...

10) ..., 3, ___, ___, ___, 403, ...

**Find the explicit formula and the next three terms in the sequence.**

11) $a_1 = -3$, $r = 6$

12) $a_1 = 1$, $r = 6$

**Find both the explicit formula and the recursive formula.**

13) 1, 2, 4, 8, ...

14) −3, 15, −75, 375, ...

**Find the missing term or terms in each geometric sequence.  That is, find the GEOMETRIC MEAN.**

15) ..., 1, ___, 16, ...

**Find the missing term or terms in each geometric sequence.**

16) ..., 3, ___, ___, ___, 48, ...

**Evaluate each arithmetic series described.**

17) $a_1 = 15,\ a_n = 31,\ n = 5$

18) $50 + 60 + 70 + 80...,\ n = 9$

19) $\sum_{m=1}^{6} (16 - 9m)$

20) $\sum_{n=3}^{7} (10n - 7)$

**Rewrite each series using sigma notation.**

21) $2 + 4 + 6 + 8$

22) $4 + 8 + 12 + 16 + 20$

**Evaluate each finite geometric series described.**

23) $-2 + 6 - 18 + 54...,\ n = 8$

24) $\sum_{n=1}^{9} 5^{n-1}$

**Find r and determine if each geometric series converges or diverges. Must justify your answer.**

25) $-2 - \dfrac{1}{2} - \dfrac{1}{8} - \dfrac{1}{32}...$

26) $\displaystyle\sum_{i=1}^{\infty} \dfrac{40}{27} \cdot \left(\dfrac{3}{2}\right)^{i-1}$

**Evaluate each infinite geometric series described.**

27) $\displaystyle\sum_{k=1}^{\infty} 243 \cdot \left(\dfrac{1}{3}\right)^{k-1}$

28) $\displaystyle\sum_{i=1}^{\infty} -(-3)^{i-1}$

29) $\displaystyle\sum_{m=1}^{\infty} -\left(\dfrac{1}{3}\right)^{m-1}$