PCT 10.1 and 10.2 Review WS

Name _____ Date _____

Find the sum of each series after writing each in expanded form.

1) $\sum_{x=1}^{6}(2x+1)$

2) $\sum_{x=0}^{4}(2x)!$

3) $\sum_{x=2}^{7}(cosx)$

4) $\sum_{x=-1}^{4} 2^x$

5) $\sum_{x=1}^{5} 2(\log(x))$

6) $\sum_{x=1}^{6} \frac{3}{x}$

Write each series using sigma notation. On number 7, also write the series in **recursive** form.

7) 3 + 8 + 13 + 18 + 23 + 28

8) 1 + 2 + 6 + 24 + 120

9) 1 + 4 + 9 + 16 + 25 + 36 + 49

10) sin(8) + sin(9) + sin(10) + sin(11) + sin(12) + sin(13)

11) 3log(14) + 3log(28) + 3log(42) + 3log(56)

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12) 3 + 8 + 15 + 24 + 35 + 48

13) 1 + 8 + 27 + 64 + 125 + 216

14) 2 + 4 + 12 + 48 + 240

Arithmetic Sequences and Series

Write a formula for the general term (nth term) of each arithmetic sequence. Then find the specified term. Also write the **recursive** formula for number 15.

15) 7, 11, 15, 19, … Find a_{78}

16) 9, 4, -1, -6, … Find a_{37}

17) $a_1 = 25$, $d = -9$ Find a_{27}

18) $a_n = a_{n-1} + 4$, $a_1 = -18$ Find a_{29}

19) $a_7 = 7$, $d = 7$ Find a_{39}

Find the **sum** of each arithmetic series.

20) 23 + 27 + 31 + …. Find the sum of the first 43 terms.

21) 42 + 32 + 22 + 12 + … Find the sum of the first 102 terms.

22) Find the sum of the first 150 natural numbers.

23) $\sum_{x=1}^{65}(3x+1)$

24) $\sum_{x=0}^{70}(-2x+11)$

25) $\sum_{x=-1}^{52}(2x+5)$

26) Write the **recursive** formula for 1 + 1 + 2 + 3 + 5 + 8 + 13 + …