

Name: _____

Date: _____

Pre Calculus 11: HW Section 1.6 Sigma Notations and Summation

1. Indicate the number of terms in each series. Determine whether if it is an arithmetic or geometric series

a) $\sum_{x=1}^{11} 2x+1$	b) $\sum_{x=2}^{13} 3(2)^{x-5}$	c) $\sum_{x=1}^{99} 2^x + 3$	d) $\sum_{x=2}^{11} 7x - 4$
e) $\sum_{x=3}^{20} 4(x-1)+3$	f) $\sum_{x=n-2}^{n+6} x+7$	g) $\sum_{x=a}^9 2x = 84$	h) $\sum_{x=3}^a x^2 = 814$

2. Write the series corresponding to each expression and then find the sum. Please show all your work!

a) $\sum_{x=4}^{12} 2(3+x)$	b) $\sum_{x=2}^8 x - 4$
c) $\sum_{x=-2}^4 3^x$	d) $\sum_{x=5}^{10} x^2$
e) $\sum_{x=-5}^9 3^{x-2}$	f) $\sum_{x=1}^6 5(2)^{x-1}$

3. Express each series using sigma notations. Please show all your work

<p>a) $2 + 1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \frac{1}{32}$</p>	<p>b) $3 + 7 + 11 + 15 + 19 + 23 + 27 + 31 + 35$</p>
<p>c) $(5) + (5+2) + (5+4) + (5+6) + (5+8) + (5+10)$</p>	<p>d) $3 + 3(0.8) + 3(0.8)^2 + 3(0.8)^3 + 3(0.8)^4 + \dots + 3(0.8)^{12}$</p>
<p>e) $\sqrt{2} + 2 + 2\sqrt{2} + 4 + 4\sqrt{2} + \dots + 128\sqrt{2}$</p>	<p>f) $2 + \frac{2}{1.01} + \frac{2}{1.01^2} + \frac{2}{1.01^3} + \dots$</p>
<p>g) $2 - 6 + 18 - 54 + 162 - 486 + \dots + 1062882$</p>	

4. Evaluate each of the following series:

a) $\sum_{n=1}^{2001} n$	b) $\sum_{k=1}^3 \frac{1}{2k}$
c) $\sum_{i=1}^{10} \frac{10}{i}$	d) $\sum_{i=1}^{\infty} \frac{1}{5^i}$

5. Solve for "x" . Show all your work with the space provided

a) $\sum_{z=1}^x 5(2)^z = 1270$
b) $\sum_{z=1}^3 x^{z-1} = 7$