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State the first 4 terms of each sequence.

1. $t_n = 8 + 12(n-1)$ ⇒ 8, 20, 32, 44

n	t_n
1	$8+12(1-1)=8$
2	$8+12(2-1)=20$
3	$8+12(3-1)=32$
4	$8+12(4-1)=44$

2. $f(n) = -6(3)^{n-1}$ ⇒ -6, -18, -54, -162

n	f(n)
1	$-6(3)^{1-1} = -6$
2	$-6(3)^{2-1} = -18$
3	$-6(3)^{3-1} = -54$
4	$-6(3)^{4-1} = -162$

3. $t_1 = 21$
   $t_n = t_{n-1} - 13$ ⇒ 21, 8, -5, -18

$t_1 = 21$

$t_2 = t_1 - 13 = 21 - 13 = 8$

$t_3 = t_2 - 13 = 8 - 13 = -5$

$t_4 = t_3 - 13 = -5 - 13 = -18$

4. $t_1 = -9$
   $t_n = (2)t_{n-1}$ ⇒ -9, -18, -36, -72

$t_1 = -9$

$t_2 = (2)t_1 = (2)(-9) = -18$

$t_3 = (2)t_2 = (2)(-18) = -36$

$t_4 = (2)t_3 = (2)(-36) = -72$

State the first 4 terms of each sequence.

5. $t_1 = 3$
   $t_2 = 5$
   $t_n = t_{n-2} + t_{n-1}$

$t_1 = 3$

$t_2 = 5$

$t_3 = t_1 + t_2 = 3 + 5 = 8$

$t_4 = t_2 + t_3 = 5 + 8 = 13$

3, 5, 8, 13

6. $t_n = n^2 - 2n$

n	t_n
1	$(1)^2 - 2(1) = 1 - 2 = -1$
2	$(2)^2 - 2(2) = 4 - 4 = 0$
3	$(3)^2 - 2(3) = 9 - 6 = 3$
4	$(4)^2 - 2(4) = 16 - 8 = 8$

-1, 0, 3, 8

HWK #4 SAS2 Questions 2 and 8

due Tomorrow

Without using a calculator calculate the sum of the Natural Numbers from 1 to 100.

Think about how you could do this w/o a calculator.

Carl Friedrich Gauss (1777-1855) is recognized as being one of the greatest mathematicians of all time. During his lifetime he made significant contributions to almost every area of mathematics, as well as physics, astronomy and statistics.

Called by many the " Prince of Mathematicians".

While in elementary school he was told to add the numbers from 1 to 100. He was able to compute its sum, which is 5050, in a matter of seconds.

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Do problem 9 on SAS2

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Do problem 10 on SAS2

What would the seating capacity be if the auditorium had 16 rows?

$20 + 23 + 26 + 29 + 32 + 35 + 38 + 41 + 44 + 47 + 50 + 53 +$

t_1 (row 1)

$56 + 59 + 62 + 65 \rightarrow t_{16}$ (row 16)

pairs add to $20 + 65 = 85$

16 terms $\rightarrow$ 8 pairs

$8(85) = 680$

Now you can find this sum:

$1 + 2 + 3 + 4 + 5 + \ldots\ldots + 96 + 97 + 98 + 99 + 100$

$2 + 99 = 101$

$1 + 100 = 101$

There are 100 #'s which means that there are 50 pairs.
Each pair has a sum of 101

$= 50(101) = 5050$

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