1) What are the terms a_0, a_1, a_2, and a_3 of the sequence $\{a_n\}$ where a_n equals:

a) $(-2)^n$: $-2^0 = 1$, $-2^1 = -2$, $-2^2 = 4$, $-2^3 = -8$

b) 3: $a_0 = 3, a_1 = 3, a_2 = 3, a_3 = 3$

c) $7+4^n$: $7+4^0 = 8$, $7+4^1 = 11$, $7+4^2 = 23$, $7+4^3 = 71$

d) $2^n + (-2)^n$: $2^0 + (-2)^0 = 2$, $2^1 + (-2)^1 = 0$, $2^2 + (-2)^2 = 8$, $2^3 + (-2)^3 = 0$

29) What are the values of these sums?

a) $\sum_{k=1}^{5} (k+1) = \sum_{k=1}^{5} k + \sum_{k=1}^{5} 1 = 15 + 5 = \boxed{20}$

b) $\sum_{j=0}^{4} (-2)^j = (-2^0) + -2^1 + -2^2 + -2^3 + -2^4$
$1 + (-2) + 4 + (-8) + 16 = \boxed{11}$

c) $\sum_{i=1}^{10} 3 = \boxed{30}$ $(10 \cdot 3)$

*d) $\sum_{j=0}^{8} (2^{j+1} - 2^j) = \sum_{j=0}^{8} 2^j = \frac{2^{8+1} - 2^0}{2-1} = \boxed{511}$

31) What is the val of each of these sums of terms of a geo progression?

a) $\sum_{j=0}^{8} 3 \cdot 2^j = 3 \sum_{j=0}^{8} 2^j = 3\left(\frac{2^{8+1}-1}{2-1}\right) = \boxed{1533}$

b) $\sum_{j=1}^{8} 2^j = \sum_{j=1}^{8} 2^j - \sum_{j=0}^{8} 2^0 = \frac{2^{8+1} - 2^0}{2-1} - \frac{2^1 - 2^0}{2-1} = 511 - 1 = \boxed{510}$

c) $\sum_{j=2}^{9} (-3)^j = \frac{-3^{8+1} - (-3)^2}{3-1} \quad \frac{-3^2 - -3^0}{-3-1} = \boxed{4923}$

d) $\sum_{j=0}^{9} 2 \cdot (-3)^j = 2 \sum_{j=0}^{8} -3^j \rightarrow \frac{-3^{8+1} - 1}{3-1} = 4921 \times 2 = \boxed{9842}$

32) Find the val of each of these sums

a) $\sum_{j=0}^{8} (1 + (-1)^j) = \frac{2^{8+1} - 1}{2-1} = 511$ $9841 - 511 = \boxed{9330}$

b) $\sum_{j=0}^{8} (3^j - 2^j) = \sum_{j=0}^{8} 3^j - \sum_{j=0}^{8} 2^j = \frac{3^{8+1} - 1}{3-1} = 9841$

c) $\sum_{j=0}^{8} (2 \cdot 3^j + 3 \cdot 2^j) = 2 \sum_{j=0}^{8} 3^j + 3 \sum_{j=0}^{8} 2^j \; 2\left(\frac{3^9 - 1}{3-1}\right) + 3\left(\frac{2^9 - 1}{2-1}\right) = \boxed{21215}$