nth Partial Sum: the sum of the first n terms of a series.

1) Find the 4th partial sum of $a_n = (-2)^n + 3$

$1 + 7 + (-5) + 19 =$

$\boxed{22}$

2) Find S_3 of $a_n = \dfrac{4}{10^n}$

$0.4 + 0.04 + 0.004$

$= \boxed{0.444}$

3) Write the series in sigma notation. The lower bound is given.

$-2 - 1 + 0 + 1 + 2 + 3 + 4 + 5 ; n = 1$ $d = 1$

$\boxed{\displaystyle\sum_{n=1}^{8} (n-3)}$

$a_n = a_1 + (n-1)d$
$a_n = -2 + (n-1)(1)$
$a_n = -2 + n - 1$
$a_n = n - 3$

4) Write the arithmetic series in sigma notation. The lower bound is given.

$\overset{a_1}{-\dfrac{14}{5}} + \overset{a_2}{-\dfrac{13}{5}} + \left(-\dfrac{12}{5}\right) + \left(-\dfrac{11}{5}\right) + ... + \overset{-0.6}{\left(-\dfrac{3}{5}\right)} ; n = 2$

$d = -\dfrac{11}{5} - \left(-\dfrac{12}{5}\right) = \dfrac{1}{5}$

$\boxed{\displaystyle\sum_{n=2}^{12} \left(\tfrac{1}{5}n - 3\right)}$

$a_n = a_1 + (n-1)d$
$a_n = -\dfrac{14}{5} + (n-1)\left(\dfrac{1}{5}\right)$
$a_n = -\dfrac{14}{5} + \dfrac{1}{5}n - \dfrac{1}{5}$
$a_n = \dfrac{1}{5}n - \dfrac{15}{5}$

5) Write each geometric series in sigma notation.

$\overset{a_1}{0.2} - 1 + 5 - ... -625$ $r = 5 \div (-1) = -5$

$\boxed{\displaystyle\sum_{n=1}^{6} 0.2(-5)^{n-1}}$

$a_n = a_1 r^{n-1}$
$a_n = 0.2(-5)^{n-1}$

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