Non-Calculator

1) *Find the sum of the coefficients of* $(4x - 5y)^3$

2) *Find the sum of the first* 328 *even natural numbers.*

3) *Find the* $10th$ *term of the geometric sequence if* $a_3 = \frac{1}{3}$ *and* $a_7 = 27$.

4) *Find the sum of the infinite geometric series:* $10 + 4 + \frac{8}{5} + \frac{16}{25} + \cdots$

5) *Find the* n^{th} *term of the geometric sequence if:* $a_4 = 1$ *and* $a_8 = 81$.

6) *Find the summation:* $\sum_{n=1}^{6} -3\left(\frac{1}{2}\right)^{n-1}$

7) *Find* a_n *for the arithmetic sequence with* $a_2 = -5, \ d = 4, \ \& \ n = 47$

8) *Find the fifth term of* $(5 - x)^7$

9) *Find* $f(4)$ *if* $f(x) = \frac{(x+2)!}{(x)!}$ *by* 2 *different methods.*

10) *Find the summation:* $\displaystyle\sum_{n=1}^{9,999} \log\frac{n}{n+1}$

Calculator

11) *Find the partial sum of* $\displaystyle\sum_{x=1}^{79} \log_\pi x$

12) *What is the 12th term of* $(1.5x - 2.1y)^{14}$

13) *Find the formula for* a_n *and find* a_1 *for the arithmetic sequence:*

$$a_4 = -23, \quad a_8 = 95$$

14) *Find the summation by 2 methods :* $\displaystyle\sum_{24}^{95} 1.6\left(\frac{2}{3}\right)^x$

15) *Find the formula for* a_n *and find* a_1 *for the geometric sequence:*

$$a_3 = \frac{25}{7} \text{ and } a_7 = \frac{15625}{16807}$$