



Sequences & Series

Arithmetic Sequence Formulas:

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

$$S_n = \frac{n}{2}(a_1 + a_n)$$

Geometric Sequence Formulas:

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

$$S_n = \frac{a_1(1 - r^n)}{1 - r}$$

$$S_\infty = \frac{a_1}{1 - r}$$

Future Value of an Annuity:

$$F = \frac{p[(1 + \frac{r}{n})^{nt} - 1]}{\frac{r}{n}}$$

Summation Notation:

$$\sum_{i=\text{Starting Term}}^{\text{Last Term}} (\text{Equation})$$

TI-83 Sum input:

Sum(seq(equation,X,start,end,step))

TI-84 Calculator Example

Ex.) Find the 10th number for

The **sequence** $\frac{1}{x^2}$ starting at 4,
Increasing by 1.

2nd → Stat → ops → (#5) seq(
↓

Enter in Data:

Expr:

Variable:

Start:

End:

Step:

Paste:

↓

Highlight Paste → Enter → Enter

Find 10th answer: .01

Ex.) Find indicated Sum:

$$\sum_{i=1}^{10} 3i + 2$$

2nd → Stat → Math → Sum

2nd → Stat → Math → Seq

sum(seq(3x+2,x,1,10,1))