

$$\text{In}[6]:= \sum_{i=1}^{100} i$$

$$\text{Out}[6]= 5050$$

$$\text{In}[7]:= \sum_{i=1}^n i * i$$

$$\text{Out}[7]= \frac{1}{6} n (1 + n) (1 + 2 n)$$

$$\text{In}[10]:= \sum_{i=0}^{49} (2 i + 1)$$

$$\text{Out}[10]= 2500$$

$$\text{In}[13]:= \sum_{n=0}^{\infty} \left(\frac{1}{2}\right)^n$$

$$\text{Out}[13]= 2$$

$$\text{In}[14]:= \sum_{j=1}^7 \sum_{i=1}^j i$$

$$\text{Out}[14]= 84$$

$$\text{In}[18]:= \prod_{i=1}^6 i^2$$

$$\text{Out}[18]= 518400$$

$$\text{In}[19]:= \prod_{j=1}^4 \prod_{i=1}^j (2 i)$$

$$\text{Out}[19]= 294912$$

$$\text{In}[20]:= \mathbf{F[x\_]} := \mathbf{e^x Sin[x]}$$

$$\text{In}[21]:= \mathbf{FormulaOfSummation[x\_]} := \sum_{i=1}^n i^x$$

$$\text{In}[22]:= \mathbf{FormulaOfSummation[1]}$$

$$\text{Out}[22]= \frac{1}{2} n (1 + n)$$

$$\text{In}[23]:= \mathbf{FormulaOfSummation[2]}$$

$$\text{Out}[23]= \frac{1}{6} n (1 + n) (1 + 2 n)$$

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In[24]:= FormulaOfSummation[3]
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$$\text{Out[24]} = \frac{1}{4} n^2 (1 + n)^2$$