

1、整數次方篇：

$$11^2=121 \quad 12^2=144 \quad 13^2=169 \quad 14^2=196 \quad 15^2=225$$

$$16^2=256 \quad 17^2=289 \quad 18^2=324 \quad 19^2=361 \quad 20^2=400$$

$$21^2=441 \quad 22^2=484 \quad 23^2=529 \quad 24^2=576 \quad 25^2=625$$

$$26^2=676 \quad 27^2=729 \quad 28^2=784 \quad 29^2=841 \quad 30^2=900$$

$$31^2=961 \quad 32^2=1024$$

$$7^3=343 \quad 8^3=512 \quad 9^3=729 \quad 10^3=1000 \quad 11^3=1331$$

$$2^{10}=1024 \quad 2^{11}=2048 \quad 2^{12}=4096 \quad 2^{13}=8192 \quad 2^{14}=16384$$

$$2^{15}=32768 \quad 2^{16}=65536 \quad 2^{20} \doteq 105 \text{萬}$$

$$3^5=243 \quad 3^6=729 \quad 3^7=2187 \quad 3^8=6561$$

$$5^4=625 \quad 5^5=3125 \quad 5^6=15625$$

$$6^3=216 \quad 6^4=1296$$

2、根號篇

$$\sqrt{2} \approx 1.414 \quad \sqrt{3} \approx 1.732 \quad \sqrt{5} \approx 2.236 \quad \sqrt{6} \approx 2.449 \quad \sqrt{7} \approx 2.646$$

$$\sqrt{8} \approx 2.828 \quad \sqrt{10} \approx 3.16 \quad \frac{\sqrt{5}+1}{2} \approx 1.618(\text{黃金分割}) \quad \frac{\sqrt{5}-1}{2} \approx 0.618$$

3、對數篇

$$*\log 2 \approx 0.3010 \quad *\log 3 \approx 0.4771 \quad \log 4 \approx 0.6020 \quad \log 5 \approx 0.6990$$

$$\log 6 \approx 0.7781 \quad *\log 7 \approx 0.8451 \quad \log 8 \approx 0.9030 \quad \log 9 \approx 0.9542$$

4、幾何、三角函數篇

$$\pi^2 \approx 10 \quad 1\text{rad} \approx 57^\circ$$

$$\sin 15^\circ = \cos 75^\circ = \frac{\sqrt{6} - \sqrt{2}}{4}$$

$$\sin 75^\circ = \cos 15^\circ = \frac{\sqrt{6} + \sqrt{2}}{4}$$

$$\tan 15^\circ = \cot 75^\circ = 2 - \sqrt{3}$$

$$\tan 75^\circ = \cot 15^\circ = 2 + \sqrt{3}$$

$$\sin 18^\circ = \cos 72^\circ = \frac{\sqrt{5} - 1}{4}$$

$$\cos 36^\circ = \sin 54^\circ = \frac{\sqrt{5} + 1}{4}$$

## 5、排列組合篇

$$0! = 1$$

$$1! = 1$$

$$2! = 2$$

$$3! = 6$$

$$4! = 24$$

$$5! = 120$$

$$6! = 720$$

$$7! = 5040$$

$$8! = 40320$$

$$9! = 362880$$

$$C_2^4 = 6$$

$$C_2^5 = 10$$

$$C_2^6 = 15$$

$$C_3^6 = 20$$

$$C_2^7 = 21$$

$$C_3^7 = 35$$

$$C_2^8 = 28$$

$$C_3^8 = 56$$

$$C_4^8 = 70$$

$$C_2^9 = 36$$

$$C_3^9 = 84$$

$$C_4^9 = 126$$

$$C_2^{10} = 45$$

$$C_3^{10} = 120$$

$$C_4^{10} = 210$$

$$C_5^{10} = 252$$

錯列(**n**對**n**全錯)：

$$2 \rightarrow 1$$

$$3 \rightarrow 2$$

$$4 \rightarrow 9$$

$$5 \rightarrow 44$$

$$6 \rightarrow 265$$

$$7 \rightarrow 1854$$

$$8 \rightarrow 14833$$