

# 수학 상수 표

기호	상세	값 (소수점 아래 20자리까지)
$\pi$	원주율	3.14159 26535 89793 23846
$\tau$	새 원주율	6.28318 53071 79586 47692
$\sqrt{2}$	2의 제곱근	1.41421 35623 73095 04880
$\sqrt{3}$	3의 제곱근	1.73205 08075 68877 29352
$\sqrt{5}$	5의 제곱근	2.23606 79774 99789 69640
$\phi$	황금비	1.61803 39887 49894 84820
$\sqrt[3]{2}$	2의 세제곱근	1.25992 10498 94873 16576
$\sqrt[3]{3}$	3의 세제곱근	1.44224 95703 07408 38232
$\sqrt[12]{2}$	2의 12제곱근	1.05946 30943 59295 26456
$e$	자연로그의 밑	2.71828 18284 59045 23536
$\ln 2$	2의 자연로그	0.69314 71805 59945 30941
$\gamma$	Euler-Mascheroni 상수	0.57721 56649 01532 86060
$\Omega$	오메가 상수	0.56714 32904 09783 87299
$\delta$	제1 Feigenbaum 상수	4.66920 16091 02990 67185
$\alpha$	제2 Feigenbaum 상수	2.50290 78750 95892 82228
$\beta$	Bernstein 상수	0.28016 94990 23869 13303
$\zeta(3)$	Apéry 상수	1.20205 69031 59594 28539
$\rho$	소수 상수	0.41468 25098 51111 66024

# Imperial 단위 변환 표

$$\text{inch} = 2.5400000 \times 10^{-2}\text{m}$$

$$\text{foot} = 3.0480000 \times 10^{-1}\text{m}$$

$$\text{yard} = 9.1440000 \times 10^{-1}\text{m}$$

$$\text{mile} = 1.6093440 \times 10^{+3}\text{m}$$

$$\text{fl oz} = 2.8413063 \times 10^{-2}\text{m}^3$$

$$\text{oz} = 2.8349523 \times 10^{-2}\text{kg}$$

$$\text{lb} = 4.5359237 \times 10^{-1}\text{kg}$$

# SI 접두사

$$\text{tera (T)} = 10^{12}$$

$$\text{giga (G)} = 10^9$$

$$\text{mega (M)} = 10^6$$

$$\text{kilo (k)} = 10^3$$

$$\text{hecto (h)} = 10^2$$

$$\text{deka (da)} = 10^1$$

$$\text{deci (d)} = 10^{-1}$$

$$\text{centi (c)} = 10^{-2}$$

$$\text{milli (m)} = 10^{-3}$$

$$\text{micro } (\mu) = 10^{-6}$$

$$\text{nano (n)} = 10^{-9}$$

$$\text{pico (p)} = 10^{-12}$$

# 상용로그 함수표

\*  $a_b$  는  $\frac{a}{10^{[\lg a]-1}} \times 10^b$  를 의미한다.

$x$	0	1	2	3	4	5	6	7	8	9
1.0	0	43214 <sub>-3</sub>	86002 <sub>-3</sub>	12837 <sub>-2</sub>	17033 <sub>-2</sub>	21189 <sub>-2</sub>	25306 <sub>-2</sub>	29384 <sub>-2</sub>	33424 <sub>-2</sub>	37426 <sub>-2</sub>
1.1	41393 <sub>-2</sub>	45323 <sub>-2</sub>	49218 <sub>-2</sub>	53078 <sub>-2</sub>	56905 <sub>-2</sub>	60698 <sub>-2</sub>	64458 <sub>-2</sub>	68186 <sub>-2</sub>	71882 <sub>-2</sub>	75547 <sub>-2</sub>
1.2	79181 <sub>-2</sub>	82785 <sub>-2</sub>	86360 <sub>-2</sub>	89905 <sub>-2</sub>	93422 <sub>-2</sub>	96910 <sub>-2</sub>	10037 <sub>-1</sub>	10380 <sub>-1</sub>	10721 <sub>-1</sub>	11059 <sub>-1</sub>
1.3	11394 <sub>-1</sub>	11727 <sub>-1</sub>	12057 <sub>-1</sub>	12385 <sub>-1</sub>	12710 <sub>-1</sub>	13033 <sub>-1</sub>	13354 <sub>-1</sub>	13672 <sub>-1</sub>	13988 <sub>-1</sub>	14301 <sub>-1</sub>
1.4	14613 <sub>-1</sub>	14922 <sub>-1</sub>	15229 <sub>-1</sub>	15534 <sub>-1</sub>	15836 <sub>-1</sub>	16137 <sub>-1</sub>	16435 <sub>-1</sub>	16732 <sub>-1</sub>	17026 <sub>-1</sub>	17319 <sub>-1</sub>
1.5	17609 <sub>-1</sub>	17898 <sub>-1</sub>	18184 <sub>-1</sub>	18469 <sub>-1</sub>	18752 <sub>-1</sub>	19033 <sub>-1</sub>	19312 <sub>-1</sub>	19590 <sub>-1</sub>	19866 <sub>-1</sub>	20140 <sub>-1</sub>
1.6	20412 <sub>-1</sub>	20683 <sub>-1</sub>	20952 <sub>-1</sub>	21219 <sub>-1</sub>	21484 <sub>-1</sub>	21748 <sub>-1</sub>	22011 <sub>-1</sub>	22272 <sub>-1</sub>	22531 <sub>-1</sub>	22789 <sub>-1</sub>
1.7	23045 <sub>-1</sub>	23300 <sub>-1</sub>	23553 <sub>-1</sub>	23805 <sub>-1</sub>	24055 <sub>-1</sub>	24304 <sub>-1</sub>	24551 <sub>-1</sub>	24797 <sub>-1</sub>	25042 <sub>-1</sub>	25285 <sub>-1</sub>
1.8	25527 <sub>-1</sub>	25768 <sub>-1</sub>	26007 <sub>-1</sub>	26245 <sub>-1</sub>	26482 <sub>-1</sub>	26717 <sub>-1</sub>	26951 <sub>-1</sub>	27184 <sub>-1</sub>	27416 <sub>-1</sub>	27646 <sub>-1</sub>
1.9	27875 <sub>-1</sub>	28103 <sub>-1</sub>	28330 <sub>-1</sub>	28556 <sub>-1</sub>	28780 <sub>-1</sub>	29003 <sub>-1</sub>	29226 <sub>-1</sub>	29447 <sub>-1</sub>	29667 <sub>-1</sub>	29885 <sub>-1</sub>
2.0	30103 <sub>-1</sub>	30320 <sub>-1</sub>	30535 <sub>-1</sub>	30750 <sub>-1</sub>	30963 <sub>-1</sub>	31175 <sub>-1</sub>	31387 <sub>-1</sub>	31597 <sub>-1</sub>	31806 <sub>-1</sub>	32015 <sub>-1</sub>
2.1	32222 <sub>-1</sub>	32428 <sub>-1</sub>	32634 <sub>-1</sub>	32838 <sub>-1</sub>	33041 <sub>-1</sub>	33244 <sub>-1</sub>	33445 <sub>-1</sub>	33646 <sub>-1</sub>	33846 <sub>-1</sub>	34044 <sub>-1</sub>
2.2	34242 <sub>-1</sub>	34439 <sub>-1</sub>	34635 <sub>-1</sub>	34830 <sub>-1</sub>	35025 <sub>-1</sub>	35218 <sub>-1</sub>	35411 <sub>-1</sub>	35603 <sub>-1</sub>	35793 <sub>-1</sub>	35984 <sub>-1</sub>
2.3	36173 <sub>-1</sub>	36361 <sub>-1</sub>	36549 <sub>-1</sub>	36736 <sub>-1</sub>	36922 <sub>-1</sub>	37107 <sub>-1</sub>	37291 <sub>-1</sub>	37475 <sub>-1</sub>	37658 <sub>-1</sub>	37840 <sub>-1</sub>
2.4	38021 <sub>-1</sub>	38202 <sub>-1</sub>	38382 <sub>-1</sub>	38561 <sub>-1</sub>	38739 <sub>-1</sub>	38917 <sub>-1</sub>	39094 <sub>-1</sub>	39270 <sub>-1</sub>	39445 <sub>-1</sub>	39620 <sub>-1</sub>
2.5	39794 <sub>-1</sub>	39967 <sub>-1</sub>	40140 <sub>-1</sub>	40312 <sub>-1</sub>	40483 <sub>-1</sub>	40654 <sub>-1</sub>	40824 <sub>-1</sub>	40993 <sub>-1</sub>	41162 <sub>-1</sub>	41330 <sub>-1</sub>
2.6	41497 <sub>-1</sub>	41664 <sub>-1</sub>	41830 <sub>-1</sub>	41996 <sub>-1</sub>	42160 <sub>-1</sub>	42325 <sub>-1</sub>	42488 <sub>-1</sub>	42651 <sub>-1</sub>	42813 <sub>-1</sub>	42975 <sub>-1</sub>
2.7	43136 <sub>-1</sub>	43297 <sub>-1</sub>	43457 <sub>-1</sub>	43616 <sub>-1</sub>	43775 <sub>-1</sub>	43933 <sub>-1</sub>	44091 <sub>-1</sub>	44248 <sub>-1</sub>	44404 <sub>-1</sub>	44560 <sub>-1</sub>
2.8	44716 <sub>-1</sub>	44871 <sub>-1</sub>	45025 <sub>-1</sub>	45179 <sub>-1</sub>	45332 <sub>-1</sub>	45484 <sub>-1</sub>	45637 <sub>-1</sub>	45788 <sub>-1</sub>	45939 <sub>-1</sub>	46090 <sub>-1</sub>
2.9	46240 <sub>-1</sub>	46389 <sub>-1</sub>	46538 <sub>-1</sub>	46687 <sub>-1</sub>	46835 <sub>-1</sub>	46982 <sub>-1</sub>	47129 <sub>-1</sub>	47276 <sub>-1</sub>	47422 <sub>-1</sub>	47567 <sub>-1</sub>
3.0	47712 <sub>-1</sub>	47857 <sub>-1</sub>	48001 <sub>-1</sub>	48144 <sub>-1</sub>	48287 <sub>-1</sub>	48430 <sub>-1</sub>	48572 <sub>-1</sub>	48714 <sub>-1</sub>	48855 <sub>-1</sub>	48996 <sub>-1</sub>
3.1	49136 <sub>-1</sub>	49276 <sub>-1</sub>	49415 <sub>-1</sub>	49554 <sub>-1</sub>	49693 <sub>-1</sub>	49831 <sub>-1</sub>	49969 <sub>-1</sub>	50106 <sub>-1</sub>	50243 <sub>-1</sub>	50379 <sub>-1</sub>
3.2	50515 <sub>-1</sub>	50651 <sub>-1</sub>	50786 <sub>-1</sub>	50920 <sub>-1</sub>	51055 <sub>-1</sub>	51188 <sub>-1</sub>	51322 <sub>-1</sub>	51455 <sub>-1</sub>	51587 <sub>-1</sub>	51720 <sub>-1</sub>
3.3	51851 <sub>-1</sub>	51983 <sub>-1</sub>	52114 <sub>-1</sub>	52244 <sub>-1</sub>	52375 <sub>-1</sub>	52504 <sub>-1</sub>	52634 <sub>-1</sub>	52763 <sub>-1</sub>	52892 <sub>-1</sub>	53020 <sub>-1</sub>
3.4	53148 <sub>-1</sub>	53275 <sub>-1</sub>	53403 <sub>-1</sub>	53529 <sub>-1</sub>	53656 <sub>-1</sub>	53782 <sub>-1</sub>	53908 <sub>-1</sub>	54033 <sub>-1</sub>	54158 <sub>-1</sub>	54283 <sub>-1</sub>
3.5	54407 <sub>-1</sub>	54531 <sub>-1</sub>	54654 <sub>-1</sub>	54777 <sub>-1</sub>	54900 <sub>-1</sub>	55023 <sub>-1</sub>	55145 <sub>-1</sub>	55267 <sub>-1</sub>	55388 <sub>-1</sub>	55509 <sub>-1</sub>
3.6	55630 <sub>-1</sub>	55751 <sub>-1</sub>	55871 <sub>-1</sub>	55991 <sub>-1</sub>	56110 <sub>-1</sub>	56229 <sub>-1</sub>	56348 <sub>-1</sub>	56467 <sub>-1</sub>	56585 <sub>-1</sub>	56703 <sub>-1</sub>
3.7	56820 <sub>-1</sub>	56937 <sub>-1</sub>	57054 <sub>-1</sub>	57171 <sub>-1</sub>	57287 <sub>-1</sub>	57403 <sub>-1</sub>	57519 <sub>-1</sub>	57634 <sub>-1</sub>	57749 <sub>-1</sub>	57864 <sub>-1</sub>
3.8	57978 <sub>-1</sub>	58092 <sub>-1</sub>	58206 <sub>-1</sub>	58320 <sub>-1</sub>	58433 <sub>-1</sub>	58546 <sub>-1</sub>	58659 <sub>-1</sub>	58771 <sub>-1</sub>	58883 <sub>-1</sub>	58995 <sub>-1</sub>
3.9	59106 <sub>-1</sub>	59218 <sub>-1</sub>	59329 <sub>-1</sub>	59439 <sub>-1</sub>	59550 <sub>-1</sub>	59660 <sub>-1</sub>	59770 <sub>-1</sub>	59879 <sub>-1</sub>	59988 <sub>-1</sub>	60097 <sub>-1</sub>
4.0	60206 <sub>-1</sub>	60314 <sub>-1</sub>	60423 <sub>-1</sub>	60531 <sub>-1</sub>	60638 <sub>-1</sub>	60746 <sub>-1</sub>	60853 <sub>-1</sub>	60959 <sub>-1</sub>	61066 <sub>-1</sub>	61172 <sub>-1</sub>
4.1	61278 <sub>-1</sub>	61384 <sub>-1</sub>	61490 <sub>-1</sub>	61595 <sub>-1</sub>	61700 <sub>-1</sub>	61805 <sub>-1</sub>	61909 <sub>-1</sub>	62014 <sub>-1</sub>	62118 <sub>-1</sub>	62221 <sub>-1</sub>
4.2	62325 <sub>-1</sub>	62428 <sub>-1</sub>	62531 <sub>-1</sub>	62634 <sub>-1</sub>	62737 <sub>-1</sub>	62839 <sub>-1</sub>	62941 <sub>-1</sub>	63043 <sub>-1</sub>	63144 <sub>-1</sub>	63246 <sub>-1</sub>
4.3	63347 <sub>-1</sub>	63448 <sub>-1</sub>	63548 <sub>-1</sub>	63649 <sub>-1</sub>	63749 <sub>-1</sub>	63849 <sub>-1</sub>	63949 <sub>-1</sub>	64048 <sub>-1</sub>	64147 <sub>-1</sub>	64246 <sub>-1</sub>
4.4	64345 <sub>-1</sub>	64444 <sub>-1</sub>	64542 <sub>-1</sub>	64640 <sub>-1</sub>	64738 <sub>-1</sub>	64836 <sub>-1</sub>	64933 <sub>-1</sub>	65031 <sub>-1</sub>	65128 <sub>-1</sub>	65225 <sub>-1</sub>
4.5	65321 <sub>-1</sub>	65418 <sub>-1</sub>	65514 <sub>-1</sub>	65610 <sub>-1</sub>	65706 <sub>-1</sub>	65801 <sub>-1</sub>	65896 <sub>-1</sub>	65992 <sub>-1</sub>	66087 <sub>-1</sub>	66181 <sub>-1</sub>
4.6	66276 <sub>-1</sub>	66370 <sub>-1</sub>	66464 <sub>-1</sub>	66558 <sub>-1</sub>	66652 <sub>-1</sub>	66745 <sub>-1</sub>	66839 <sub>-1</sub>	66932 <sub>-1</sub>	67025 <sub>-1</sub>	67117 <sub>-1</sub>
4.7	67210 <sub>-1</sub>	67302 <sub>-1</sub>	67394 <sub>-1</sub>	67486 <sub>-1</sub>	67578 <sub>-1</sub>	67669 <sub>-1</sub>	67761 <sub>-1</sub>	67852 <sub>-1</sub>	67943 <sub>-1</sub>	68034 <sub>-1</sub>
4.8	68124 <sub>-1</sub>	68215 <sub>-1</sub>	68305 <sub>-1</sub>	68395 <sub>-1</sub>	68485 <sub>-1</sub>	68574 <sub>-1</sub>	68664 <sub>-1</sub>	68753 <sub>-1</sub>	68842 <sub>-1</sub>	68931 <sub>-1</sub>
4.9	69020 <sub>-1</sub>	69108 <sub>-1</sub>	69197 <sub>-1</sub>	69285 <sub>-1</sub>	69373 <sub>-1</sub>	69461 <sub>-1</sub>	69548 <sub>-1</sub>	69636 <sub>-1</sub>	69723 <sub>-1</sub>	69810 <sub>-1</sub>
5.0	69897 <sub>-1</sub>	69984 <sub>-1</sub>	70070 <sub>-1</sub>	70157 <sub>-1</sub>	70243 <sub>-1</sub>	70329 <sub>-1</sub>	70415 <sub>-1</sub>	70501 <sub>-1</sub>	70586 <sub>-1</sub>	70672 <sub>-1</sub>
5.1	70757 <sub>-1</sub>	70842 <sub>-1</sub>	70927 <sub>-1</sub>	71012 <sub>-1</sub>	71096 <sub>-1</sub>	71181 <sub>-1</sub>	71265 <sub>-1</sub>	71349 <sub>-1</sub>	71433 <sub>-1</sub>	71517 <sub>-1</sub>
5.2	71600 <sub>-1</sub>	71684 <sub>-1</sub>	71767 <sub>-1</sub>	71850 <sub>-1</sub>	71933 <sub>-1</sub>	72016 <sub>-1</sub>	72099 <sub>-1</sub>	72181 <sub>-1</sub>	72263 <sub>-1</sub>	72346 <sub>-1</sub>
5.3	72428 <sub>-1</sub>	72509 <sub>-1</sub>	72591 <sub>-1</sub>	72673 <sub>-1</sub>	72754 <sub>-1</sub>	72835 <sub>-1</sub>	72916 <sub>-1</sub>	72997 <sub>-1</sub>	73078 <sub>-1</sub>	73159 <sub>-1</sub>
5.4	73239 <sub>-1</sub>	73320 <sub>-1</sub>	73400 <sub>-1</sub>	73480 <sub>-1</sub>	73560 <sub>-1</sub>	73640 <sub>-1</sub>	73719 <sub>-1</sub>	73799 <sub>-1</sub>	73878 <sub>-1</sub>	73957 <sub>-1</sub>
5.5	74036 <sub>-1</sub>	74115 <sub>-1</sub>	74194 <sub>-1</sub>	74273 <sub>-1</sub>	74351 <sub>-1</sub>	74429 <sub>-1</sub>	74507 <sub>-1</sub>	74586 <sub>-1</sub>	74663 <sub>-1</sub>	74741 <sub>-1</sub>

5.6	74819 <sub>-1</sub>	74896 <sub>-1</sub>	74974 <sub>-1</sub>	75051 <sub>-1</sub>	75128 <sub>-1</sub>	75205 <sub>-1</sub>	75282 <sub>-1</sub>	75358 <sub>-1</sub>	75435 <sub>-1</sub>	75511 <sub>-1</sub>
5.7	75587 <sub>-1</sub>	75664 <sub>-1</sub>	75740 <sub>-1</sub>	75815 <sub>-1</sub>	75891 <sub>-1</sub>	75967 <sub>-1</sub>	76042 <sub>-1</sub>	76118 <sub>-1</sub>	76193 <sub>-1</sub>	76268 <sub>-1</sub>
5.8	76343 <sub>-1</sub>	76418 <sub>-1</sub>	76492 <sub>-1</sub>	76567 <sub>-1</sub>	76641 <sub>-1</sub>	76716 <sub>-1</sub>	76790 <sub>-1</sub>	76864 <sub>-1</sub>	76938 <sub>-1</sub>	77012 <sub>-1</sub>
5.9	77085 <sub>-1</sub>	77159 <sub>-1</sub>	77232 <sub>-1</sub>	77305 <sub>-1</sub>	77379 <sub>-1</sub>	77452 <sub>-1</sub>	77525 <sub>-1</sub>	77597 <sub>-1</sub>	77670 <sub>-1</sub>	77743 <sub>-1</sub>
6.0	77815 <sub>-1</sub>	77887 <sub>-1</sub>	77960 <sub>-1</sub>	78032 <sub>-1</sub>	78104 <sub>-1</sub>	78176 <sub>-1</sub>	78247 <sub>-1</sub>	78319 <sub>-1</sub>	78390 <sub>-1</sub>	78462 <sub>-1</sub>
6.1	78533 <sub>-1</sub>	78604 <sub>-1</sub>	78675 <sub>-1</sub>	78746 <sub>-1</sub>	78817 <sub>-1</sub>	78888 <sub>-1</sub>	78958 <sub>-1</sub>	79029 <sub>-1</sub>	79099 <sub>-1</sub>	79169 <sub>-1</sub>
6.2	79239 <sub>-1</sub>	79309 <sub>-1</sub>	79379 <sub>-1</sub>	79449 <sub>-1</sub>	79518 <sub>-1</sub>	79588 <sub>-1</sub>	79657 <sub>-1</sub>	79727 <sub>-1</sub>	79796 <sub>-1</sub>	79865 <sub>-1</sub>
6.3	79934 <sub>-1</sub>	80003 <sub>-1</sub>	80072 <sub>-1</sub>	80140 <sub>-1</sub>	80209 <sub>-1</sub>	80277 <sub>-1</sub>	80346 <sub>-1</sub>	80414 <sub>-1</sub>	80482 <sub>-1</sub>	80550 <sub>-1</sub>
6.4	80618 <sub>-1</sub>	80686 <sub>-1</sub>	80754 <sub>-1</sub>	80821 <sub>-1</sub>	80889 <sub>-1</sub>	80956 <sub>-1</sub>	81023 <sub>-1</sub>	81090 <sub>-1</sub>	81158 <sub>-1</sub>	81224 <sub>-1</sub>
6.5	81291 <sub>-1</sub>	81358 <sub>-1</sub>	81425 <sub>-1</sub>	81491 <sub>-1</sub>	81558 <sub>-1</sub>	81624 <sub>-1</sub>	81690 <sub>-1</sub>	81757 <sub>-1</sub>	81823 <sub>-1</sub>	81889 <sub>-1</sub>
6.6	81954 <sub>-1</sub>	82020 <sub>-1</sub>	82086 <sub>-1</sub>	82151 <sub>-1</sub>	82217 <sub>-1</sub>	82282 <sub>-1</sub>	82347 <sub>-1</sub>	82413 <sub>-1</sub>	82478 <sub>-1</sub>	82543 <sub>-1</sub>
6.7	82607 <sub>-1</sub>	82672 <sub>-1</sub>	82737 <sub>-1</sub>	82802 <sub>-1</sub>	82866 <sub>-1</sub>	82930 <sub>-1</sub>	82995 <sub>-1</sub>	83059 <sub>-1</sub>	83123 <sub>-1</sub>	83187 <sub>-1</sub>
6.8	83251 <sub>-1</sub>	83315 <sub>-1</sub>	83378 <sub>-1</sub>	83442 <sub>-1</sub>	83506 <sub>-1</sub>	83569 <sub>-1</sub>	83632 <sub>-1</sub>	83696 <sub>-1</sub>	83759 <sub>-1</sub>	83822 <sub>-1</sub>
6.9	83885 <sub>-1</sub>	83948 <sub>-1</sub>	84011 <sub>-1</sub>	84073 <sub>-1</sub>	84136 <sub>-1</sub>	84198 <sub>-1</sub>	84261 <sub>-1</sub>	84323 <sub>-1</sub>	84386 <sub>-1</sub>	84448 <sub>-1</sub>
7.0	84510 <sub>-1</sub>	84572 <sub>-1</sub>	84634 <sub>-1</sub>	84696 <sub>-1</sub>	84757 <sub>-1</sub>	84819 <sub>-1</sub>	84880 <sub>-1</sub>	84942 <sub>-1</sub>	85003 <sub>-1</sub>	85065 <sub>-1</sub>
7.1	85126 <sub>-1</sub>	85187 <sub>-1</sub>	85248 <sub>-1</sub>	85309 <sub>-1</sub>	85370 <sub>-1</sub>	85431 <sub>-1</sub>	85491 <sub>-1</sub>	85552 <sub>-1</sub>	85612 <sub>-1</sub>	85673 <sub>-1</sub>
7.2	85733 <sub>-1</sub>	85794 <sub>-1</sub>	85854 <sub>-1</sub>	85914 <sub>-1</sub>	85974 <sub>-1</sub>	86034 <sub>-1</sub>	86094 <sub>-1</sub>	86153 <sub>-1</sub>	86213 <sub>-1</sub>	86273 <sub>-1</sub>
7.3	86332 <sub>-1</sub>	86392 <sub>-1</sub>	86451 <sub>-1</sub>	86510 <sub>-1</sub>	86570 <sub>-1</sub>	86629 <sub>-1</sub>	86688 <sub>-1</sub>	86747 <sub>-1</sub>	86806 <sub>-1</sub>	86864 <sub>-1</sub>
7.4	86923 <sub>-1</sub>	86982 <sub>-1</sub>	87040 <sub>-1</sub>	87099 <sub>-1</sub>	87157 <sub>-1</sub>	87216 <sub>-1</sub>	87274 <sub>-1</sub>	87332 <sub>-1</sub>	87390 <sub>-1</sub>	87448 <sub>-1</sub>
7.5	87506 <sub>-1</sub>	87564 <sub>-1</sub>	87622 <sub>-1</sub>	87679 <sub>-1</sub>	87737 <sub>-1</sub>	87795 <sub>-1</sub>	87852 <sub>-1</sub>	87910 <sub>-1</sub>	87967 <sub>-1</sub>	88024 <sub>-1</sub>
7.6	88081 <sub>-1</sub>	88138 <sub>-1</sub>	88195 <sub>-1</sub>	88252 <sub>-1</sub>	88309 <sub>-1</sub>	88366 <sub>-1</sub>	88423 <sub>-1</sub>	88480 <sub>-1</sub>	88536 <sub>-1</sub>	88593 <sub>-1</sub>
7.7	88649 <sub>-1</sub>	88705 <sub>-1</sub>	88762 <sub>-1</sub>	88818 <sub>-1</sub>	88874 <sub>-1</sub>	88930 <sub>-1</sub>	88986 <sub>-1</sub>	89042 <sub>-1</sub>	89098 <sub>-1</sub>	89154 <sub>-1</sub>
7.8	89209 <sub>-1</sub>	89265 <sub>-1</sub>	89321 <sub>-1</sub>	89376 <sub>-1</sub>	89432 <sub>-1</sub>	89487 <sub>-1</sub>	89542 <sub>-1</sub>	89597 <sub>-1</sub>	89653 <sub>-1</sub>	89708 <sub>-1</sub>
7.9	89763 <sub>-1</sub>	89818 <sub>-1</sub>	89873 <sub>-1</sub>	89927 <sub>-1</sub>	89982 <sub>-1</sub>	90037 <sub>-1</sub>	90091 <sub>-1</sub>	90146 <sub>-1</sub>	90200 <sub>-1</sub>	90255 <sub>-1</sub>
8.0	90309 <sub>-1</sub>	90363 <sub>-1</sub>	90417 <sub>-1</sub>	90472 <sub>-1</sub>	90526 <sub>-1</sub>	90580 <sub>-1</sub>	90634 <sub>-1</sub>	90687 <sub>-1</sub>	90741 <sub>-1</sub>	90795 <sub>-1</sub>
8.1	90849 <sub>-1</sub>	90902 <sub>-1</sub>	90956 <sub>-1</sub>	91009 <sub>-1</sub>	91062 <sub>-1</sub>	91116 <sub>-1</sub>	91169 <sub>-1</sub>	91222 <sub>-1</sub>	91275 <sub>-1</sub>	91328 <sub>-1</sub>
8.2	91381 <sub>-1</sub>	91434 <sub>-1</sub>	91487 <sub>-1</sub>	91540 <sub>-1</sub>	91593 <sub>-1</sub>	91645 <sub>-1</sub>	91698 <sub>-1</sub>	91751 <sub>-1</sub>	91803 <sub>-1</sub>	91855 <sub>-1</sub>
8.3	91908 <sub>-1</sub>	91960 <sub>-1</sub>	92012 <sub>-1</sub>	92065 <sub>-1</sub>	92117 <sub>-1</sub>	92169 <sub>-1</sub>	92221 <sub>-1</sub>	92273 <sub>-1</sub>	92324 <sub>-1</sub>	92376 <sub>-1</sub>
8.4	92428 <sub>-1</sub>	92480 <sub>-1</sub>	92531 <sub>-1</sub>	92583 <sub>-1</sub>	92634 <sub>-1</sub>	92686 <sub>-1</sub>	92737 <sub>-1</sub>	92788 <sub>-1</sub>	92840 <sub>-1</sub>	92891 <sub>-1</sub>
8.5	92942 <sub>-1</sub>	92993 <sub>-1</sub>	93044 <sub>-1</sub>	93095 <sub>-1</sub>	93146 <sub>-1</sub>	93197 <sub>-1</sub>	93247 <sub>-1</sub>	93298 <sub>-1</sub>	93349 <sub>-1</sub>	93399 <sub>-1</sub>
8.6	93450 <sub>-1</sub>	93500 <sub>-1</sub>	93551 <sub>-1</sub>	93601 <sub>-1</sub>	93651 <sub>-1</sub>	93702 <sub>-1</sub>	93752 <sub>-1</sub>	93802 <sub>-1</sub>	93852 <sub>-1</sub>	93902 <sub>-1</sub>
8.7	93952 <sub>-1</sub>	94002 <sub>-1</sub>	94052 <sub>-1</sub>	94101 <sub>-1</sub>	94151 <sub>-1</sub>	94201 <sub>-1</sub>	94250 <sub>-1</sub>	94300 <sub>-1</sub>	94349 <sub>-1</sub>	94399 <sub>-1</sub>
8.8	94448 <sub>-1</sub>	94498 <sub>-1</sub>	94547 <sub>-1</sub>	94596 <sub>-1</sub>	94645 <sub>-1</sub>	94694 <sub>-1</sub>	94743 <sub>-1</sub>	94792 <sub>-1</sub>	94841 <sub>-1</sub>	94890 <sub>-1</sub>
8.9	94939 <sub>-1</sub>	94988 <sub>-1</sub>	95036 <sub>-1</sub>	95085 <sub>-1</sub>	95134 <sub>-1</sub>	95182 <sub>-1</sub>	95231 <sub>-1</sub>	95279 <sub>-1</sub>	95328 <sub>-1</sub>	95376 <sub>-1</sub>
9.0	95424 <sub>-1</sub>	95472 <sub>-1</sub>	95521 <sub>-1</sub>	95569 <sub>-1</sub>	95617 <sub>-1</sub>	95665 <sub>-1</sub>	95713 <sub>-1</sub>	95761 <sub>-1</sub>	95809 <sub>-1</sub>	95856 <sub>-1</sub>
9.1	95904 <sub>-1</sub>	95952 <sub>-1</sub>	95999 <sub>-1</sub>	96047 <sub>-1</sub>	96095 <sub>-1</sub>	96142 <sub>-1</sub>	96190 <sub>-1</sub>	96237 <sub>-1</sub>	96284 <sub>-1</sub>	96332 <sub>-1</sub>
9.2	96379 <sub>-1</sub>	96426 <sub>-1</sub>	96473 <sub>-1</sub>	96520 <sub>-1</sub>	96567 <sub>-1</sub>	96614 <sub>-1</sub>	96661 <sub>-1</sub>	96708 <sub>-1</sub>	96755 <sub>-1</sub>	96802 <sub>-1</sub>
9.3	96848 <sub>-1</sub>	96895 <sub>-1</sub>	96942 <sub>-1</sub>	96988 <sub>-1</sub>	97035 <sub>-1</sub>	97081 <sub>-1</sub>	97128 <sub>-1</sub>	97174 <sub>-1</sub>	97220 <sub>-1</sub>	97267 <sub>-1</sub>
9.4	97313 <sub>-1</sub>	97359 <sub>-1</sub>	97405 <sub>-1</sub>	97451 <sub>-1</sub>	97497 <sub>-1</sub>	97543 <sub>-1</sub>	97589 <sub>-1</sub>	97635 <sub>-1</sub>	97681 <sub>-1</sub>	97727 <sub>-1</sub>
9.5	97772 <sub>-1</sub>	97818 <sub>-1</sub>	97864 <sub>-1</sub>	97909 <sub>-1</sub>	97955 <sub>-1</sub>	98000 <sub>-1</sub>	98046 <sub>-1</sub>	98091 <sub>-1</sub>	98137 <sub>-1</sub>	98182 <sub>-1</sub>
9.6	98227 <sub>-1</sub>	98272 <sub>-1</sub>	98318 <sub>-1</sub>	98363 <sub>-1</sub>	98408 <sub>-1</sub>	98453 <sub>-1</sub>	98498 <sub>-1</sub>	98543 <sub>-1</sub>	98588 <sub>-1</sub>	98632 <sub>-1</sub>
9.7	98677 <sub>-1</sub>	98722 <sub>-1</sub>	98767 <sub>-1</sub>	98811 <sub>-1</sub>	98856 <sub>-1</sub>	98900 <sub>-1</sub>	98945 <sub>-1</sub>	98989 <sub>-1</sub>	99034 <sub>-1</sub>	99078 <sub>-1</sub>
9.8	99123 <sub>-1</sub>	99167 <sub>-1</sub>	99211 <sub>-1</sub>	99255 <sub>-1</sub>	99300 <sub>-1</sub>	99344 <sub>-1</sub>	99388 <sub>-1</sub>	99432 <sub>-1</sub>	99476 <sub>-1</sub>	99520 <sub>-1</sub>
9.9	99564 <sub>-1</sub>	99607 <sub>-1</sub>	99651 <sub>-1</sub>	99695 <sub>-1</sub>	99739 <sub>-1</sub>	99782 <sub>-1</sub>	99826 <sub>-1</sub>	99870 <sub>-1</sub>	99913 <sub>-1</sub>	99957 <sub>-1</sub>

## 추가 함숫값

- $\lg e = 0.43429\ 44819\ 03251\ 82765$

- $|\Delta x| \gg 0$  일 때,

$$\lg(x + \Delta x) = \lg(x) + \lg e \sum_{n=1}^{\infty} \frac{(-1)^{n+1}}{n} \left(\frac{\Delta x}{x}\right)^n$$

$|\Delta x| \leq 0.01$  이면 일차 테일러 급수로 근사하면 최대 오차율은 0.0050336 이고,  $x \geq 3.02$  이면 최대 오차율은 0.0000049860 이다.

이차 테일러 다항식으로 근사하면 최대 오차율은 -0.000033418 이고,  $x \geq 1.07$  이면 최대 오차율은 0.0000047027 이다.

삼차 테일러 다항식으로 근사하면 최대 오차율은 -0.00000025075로 유효숫자 5개를 구하는 데에는 충분하다.

재무용 계산기를 사용해 이 3차 테일러 다항식의 값을 계산한다면 다음과 같은 식으로 계산하라:

$$\lg(x + \Delta x) = \left( \left( \frac{2}{3} \times \frac{\Delta x}{x} - 1 \right) \times \frac{1}{2} \times \frac{\Delta x}{x} + 1 \right) \times \frac{\Delta x}{x} \times \lg e + \lg x$$

- $|\Delta x| \gg 0$  일 때,

$$10^{x+\Delta x} = 10^x \sum_{n=0}^{\infty} \frac{1}{n!} \left( \frac{\Delta x}{\lg e} \right)^n$$

해당 로그표를 사용하여 지수를 계산할 때 값을 보정하는 용도로 사용한다면 유효숫자 5개를 구하는 데에는 2차 테일러 다항식만으로도 구할 수 있다.

특히  $|\Delta x| \leq 0.0013$  이면 1차 테일러 다항식만으로도 충분히 정확한 값을 계산할 수 있다.

재무용 계산기를 사용해 2차 테일러 다항식의 값을 계산한다면 다음과 같이 계산하라:

$$10^{x+\Delta x} = \left( \left( 0.5 \times \frac{\Delta x}{\lg e} + 1 \right) \times \frac{\Delta x}{\lg e} + 1 \right) \times 10^x$$

# 사인 함수표

\*  $x \mapsto \sin\left(\frac{\pi}{2}x\right)$  의 표

$x$	0	1	2	3	4	5	6	7	8	9
0.00	0	15708 <sub>-3</sub>	31416 <sub>-3</sub>	47124 <sub>-3</sub>	62831 <sub>-3</sub>	78539 <sub>-3</sub>	94246 <sub>-3</sub>	10995 <sub>-2</sub>	12566 <sub>-2</sub>	14137 <sub>-2</sub>
0.01	15707 <sub>-2</sub>	17278 <sub>-2</sub>	18848 <sub>-2</sub>	20419 <sub>-2</sub>	21989 <sub>-2</sub>	23560 <sub>-2</sub>	25130 <sub>-2</sub>	26700 <sub>-2</sub>	28271 <sub>-2</sub>	29841 <sub>-2</sub>
0.02	31411 <sub>-2</sub>	32981 <sub>-2</sub>	34551 <sub>-2</sub>	36120 <sub>-2</sub>	37690 <sub>-2</sub>	39260 <sub>-2</sub>	40829 <sub>-2</sub>	42399 <sub>-2</sub>	43968 <sub>-2</sub>	45537 <sub>-2</sub>
0.03	47106 <sub>-2</sub>	48675 <sub>-2</sub>	50244 <sub>-2</sub>	51813 <sub>-2</sub>	53382 <sub>-2</sub>	54950 <sub>-2</sub>	56519 <sub>-2</sub>	58087 <sub>-2</sub>	59655 <sub>-2</sub>	61223 <sub>-2</sub>
0.04	62791 <sub>-2</sub>	64358 <sub>-2</sub>	65926 <sub>-2</sub>	67493 <sub>-2</sub>	69060 <sub>-2</sub>	70627 <sub>-2</sub>	72194 <sub>-2</sub>	73760 <sub>-2</sub>	75327 <sub>-2</sub>	76893 <sub>-2</sub>
0.05	78459 <sub>-2</sub>	80025 <sub>-2</sub>	81591 <sub>-2</sub>	83156 <sub>-2</sub>	84721 <sub>-2</sub>	86286 <sub>-2</sub>	87851 <sub>-2</sub>	89416 <sub>-2</sub>	90980 <sub>-2</sub>	92544 <sub>-2</sub>
0.06	94108 <sub>-2</sub>	95672 <sub>-2</sub>	97235 <sub>-2</sub>	98799 <sub>-2</sub>	10036 <sub>-1</sub>	10192 <sub>-1</sub>	10349 <sub>-1</sub>	10505 <sub>-1</sub>	10661 <sub>-1</sub>	10817 <sub>-1</sub>
0.07	10973 <sub>-1</sub>	11130 <sub>-1</sub>	11286 <sub>-1</sub>	11442 <sub>-1</sub>	11598 <sub>-1</sub>	11754 <sub>-1</sub>	11910 <sub>-1</sub>	12066 <sub>-1</sub>	12222 <sub>-1</sub>	12377 <sub>-1</sub>
0.08	12533 <sub>-1</sub>	12689 <sub>-1</sub>	12845 <sub>-1</sub>	13001 <sub>-1</sub>	13156 <sub>-1</sub>	13312 <sub>-1</sub>	13468 <sub>-1</sub>	13623 <sub>-1</sub>	13779 <sub>-1</sub>	13935 <sub>-1</sub>
0.09	14090 <sub>-1</sub>	14246 <sub>-1</sub>	14401 <sub>-1</sub>	14557 <sub>-1</sub>	14712 <sub>-1</sub>	14867 <sub>-1</sub>	15023 <sub>-1</sub>	15178 <sub>-1</sub>	15333 <sub>-1</sub>	15488 <sub>-1</sub>
0.10	15643 <sub>-1</sub>	15799 <sub>-1</sub>	15954 <sub>-1</sub>	16109 <sub>-1</sub>	16264 <sub>-1</sub>	16419 <sub>-1</sub>	16574 <sub>-1</sub>	16728 <sub>-1</sub>	16883 <sub>-1</sub>	17038 <sub>-1</sub>
0.11	17193 <sub>-1</sub>	17348 <sub>-1</sub>	17502 <sub>-1</sub>	17657 <sub>-1</sub>	17812 <sub>-1</sub>	17966 <sub>-1</sub>	18121 <sub>-1</sub>	18275 <sub>-1</sub>	18429 <sub>-1</sub>	18584 <sub>-1</sub>
0.12	18738 <sub>-1</sub>	18892 <sub>-1</sub>	19047 <sub>-1</sub>	19201 <sub>-1</sub>	19355 <sub>-1</sub>	19509 <sub>-1</sub>	19663 <sub>-1</sub>	19817 <sub>-1</sub>	19971 <sub>-1</sub>	20125 <sub>-1</sub>
0.13	20279 <sub>-1</sub>	20433 <sub>-1</sub>	20586 <sub>-1</sub>	20740 <sub>-1</sub>	20894 <sub>-1</sub>	21047 <sub>-1</sub>	21201 <sub>-1</sub>	21354 <sub>-1</sub>	21508 <sub>-1</sub>	21661 <sub>-1</sub>
0.14	21814 <sub>-1</sub>	21968 <sub>-1</sub>	22121 <sub>-1</sub>	22274 <sub>-1</sub>	22427 <sub>-1</sub>	22580 <sub>-1</sub>	22733 <sub>-1</sub>	22886 <sub>-1</sub>	23039 <sub>-1</sub>	23192 <sub>-1</sub>
0.15	23345 <sub>-1</sub>	23497 <sub>-1</sub>	23650 <sub>-1</sub>	23802 <sub>-1</sub>	23955 <sub>-1</sub>	24108 <sub>-1</sub>	24260 <sub>-1</sub>	24412 <sub>-1</sub>	24565 <sub>-1</sub>	24717 <sub>-1</sub>
0.16	24869 <sub>-1</sub>	25021 <sub>-1</sub>	25173 <sub>-1</sub>	25325 <sub>-1</sub>	25477 <sub>-1</sub>	25629 <sub>-1</sub>	25781 <sub>-1</sub>	25932 <sub>-1</sub>	26084 <sub>-1</sub>	26236 <sub>-1</sub>
0.17	26387 <sub>-1</sub>	26539 <sub>-1</sub>	26690 <sub>-1</sub>	26842 <sub>-1</sub>	26993 <sub>-1</sub>	27144 <sub>-1</sub>	27295 <sub>-1</sub>	27446 <sub>-1</sub>	27597 <sub>-1</sub>	27748 <sub>-1</sub>
0.18	27899 <sub>-1</sub>	28050 <sub>-1</sub>	28201 <sub>-1</sub>	28351 <sub>-1</sub>	28502 <sub>-1</sub>	28652 <sub>-1</sub>	28803 <sub>-1</sub>	28953 <sub>-1</sub>	29104 <sub>-1</sub>	29254 <sub>-1</sub>
0.19	29404 <sub>-1</sub>	29554 <sub>-1</sub>	29704 <sub>-1</sub>	29854 <sub>-1</sub>	30004 <sub>-1</sub>	30154 <sub>-1</sub>	30304 <sub>-1</sub>	30453 <sub>-1</sub>	30603 <sub>-1</sub>	30752 <sub>-1</sub>
0.20	30902 <sub>-1</sub>	31051 <sub>-1</sub>	31200 <sub>-1</sub>	31350 <sub>-1</sub>	31499 <sub>-1</sub>	31648 <sub>-1</sub>	31797 <sub>-1</sub>	31946 <sub>-1</sub>	32094 <sub>-1</sub>	32243 <sub>-1</sub>
0.21	32392 <sub>-1</sub>	32540 <sub>-1</sub>	32689 <sub>-1</sub>	32837 <sub>-1</sub>	32986 <sub>-1</sub>	33134 <sub>-1</sub>	33282 <sub>-1</sub>	33430 <sub>-1</sub>	33578 <sub>-1</sub>	33726 <sub>-1</sub>
0.22	33874 <sub>-1</sub>	34022 <sub>-1</sub>	34169 <sub>-1</sub>	34317 <sub>-1</sub>	34464 <sub>-1</sub>	34612 <sub>-1</sub>	34759 <sub>-1</sub>	34906 <sub>-1</sub>	35053 <sub>-1</sub>	35201 <sub>-1</sub>
0.23	35347 <sub>-1</sub>	35494 <sub>-1</sub>	35641 <sub>-1</sub>	35788 <sub>-1</sub>	35935 <sub>-1</sub>	36081 <sub>-1</sub>	36228 <sub>-1</sub>	36374 <sub>-1</sub>	36520 <sub>-1</sub>	36666 <sub>-1</sub>
0.24	36812 <sub>-1</sub>	36958 <sub>-1</sub>	37104 <sub>-1</sub>	37250 <sub>-1</sub>	37396 <sub>-1</sub>	37542 <sub>-1</sub>	37687 <sub>-1</sub>	37833 <sub>-1</sub>	37978 <sub>-1</sub>	38123 <sub>-1</sub>
0.25	38268 <sub>-1</sub>	38413 <sub>-1</sub>	38558 <sub>-1</sub>	38703 <sub>-1</sub>	38848 <sub>-1</sub>	38993 <sub>-1</sub>	39137 <sub>-1</sub>	39282 <sub>-1</sub>	39426 <sub>-1</sub>	39571 <sub>-1</sub>
0.26	39715 <sub>-1</sub>	39859 <sub>-1</sub>	40003 <sub>-1</sub>	40147 <sub>-1</sub>	40291 <sub>-1</sub>	40434 <sub>-1</sub>	40578 <sub>-1</sub>	40721 <sub>-1</sub>	40865 <sub>-1</sub>	41008 <sub>-1</sub>
0.27	41151 <sub>-1</sub>	41295 <sub>-1</sub>	41438 <sub>-1</sub>	41580 <sub>-1</sub>	41723 <sub>-1</sub>	41866 <sub>-1</sub>	42009 <sub>-1</sub>	42151 <sub>-1</sub>	42293 <sub>-1</sub>	42436 <sub>-1</sub>
0.28	42578 <sub>-1</sub>	42720 <sub>-1</sub>	42862 <sub>-1</sub>	43004 <sub>-1</sub>	43146 <sub>-1</sub>	43287 <sub>-1</sub>	43429 <sub>-1</sub>	43570 <sub>-1</sub>	43712 <sub>-1</sub>	43853 <sub>-1</sub>
0.29	43994 <sub>-1</sub>	44135 <sub>-1</sub>	44276 <sub>-1</sub>	44417 <sub>-1</sub>	44557 <sub>-1</sub>	44698 <sub>-1</sub>	44838 <sub>-1</sub>	44979 <sub>-1</sub>	45119 <sub>-1</sub>	45259 <sub>-1</sub>
0.30	45399 <sub>-1</sub>	45539 <sub>-1</sub>	45679 <sub>-1</sub>	45818 <sub>-1</sub>	45958 <sub>-1</sub>	46097 <sub>-1</sub>	46237 <sub>-1</sub>	46376 <sub>-1</sub>	46515 <sub>-1</sub>	46654 <sub>-1</sub>
0.31	46793 <sub>-1</sub>	46932 <sub>-1</sub>	47070 <sub>-1</sub>	47209 <sub>-1</sub>	47347 <sub>-1</sub>	47486 <sub>-1</sub>	47624 <sub>-1</sub>	47762 <sub>-1</sub>	47900 <sub>-1</sub>	48038 <sub>-1</sub>
0.32	48175 <sub>-1</sub>	48313 <sub>-1</sub>	48450 <sub>-1</sub>	48588 <sub>-1</sub>	48725 <sub>-1</sub>	48862 <sub>-1</sub>	48999 <sub>-1</sub>	49136 <sub>-1</sub>	49273 <sub>-1</sub>	49409 <sub>-1</sub>
0.33	49546 <sub>-1</sub>	49682 <sub>-1</sub>	49819 <sub>-1</sub>	49955 <sub>-1</sub>	50091 <sub>-1</sub>	50227 <sub>-1</sub>	50362 <sub>-1</sub>	50498 <sub>-1</sub>	50633 <sub>-1</sub>	50769 <sub>-1</sub>
0.34	50904 <sub>-1</sub>	51039 <sub>-1</sub>	51174 <sub>-1</sub>	51309 <sub>-1</sub>	51444 <sub>-1</sub>	51579 <sub>-1</sub>	51713 <sub>-1</sub>	51847 <sub>-1</sub>	51982 <sub>-1</sub>	52116 <sub>-1</sub>
0.35	52250 <sub>-1</sub>	52384 <sub>-1</sub>	52517 <sub>-1</sub>	52651 <sub>-1</sub>	52785 <sub>-1</sub>	52918 <sub>-1</sub>	53051 <sub>-1</sub>	53184 <sub>-1</sub>	53317 <sub>-1</sub>	53450 <sub>-1</sub>
0.36	53583 <sub>-1</sub>	53715 <sub>-1</sub>	53848 <sub>-1</sub>	53980 <sub>-1</sub>	54112 <sub>-1</sub>	54244 <sub>-1</sub>	54376 <sub>-1</sub>	54508 <sub>-1</sub>	54639 <sub>-1</sub>	54771 <sub>-1</sub>
0.37	54902 <sub>-1</sub>	55034 <sub>-1</sub>	55165 <sub>-1</sub>	55296 <sub>-1</sub>	55426 <sub>-1</sub>	55557 <sub>-1</sub>	55688 <sub>-1</sub>	55818 <sub>-1</sub>	55948 <sub>-1</sub>	56078 <sub>-1</sub>
0.38	56208 <sub>-1</sub>	56338 <sub>-1</sub>	56468 <sub>-1</sub>	56597 <sub>-1</sub>	56727 <sub>-1</sub>	56856 <sub>-1</sub>	56985 <sub>-1</sub>	57114 <sub>-1</sub>	57243 <sub>-1</sub>	57372 <sub>-1</sub>
0.39	57501 <sub>-1</sub>	57629 <sub>-1</sub>	57757 <sub>-1</sub>	57885 <sub>-1</sub>	58013 <sub>-1</sub>	58141 <sub>-1</sub>	58269 <sub>-1</sub>	58397 <sub>-1</sub>	58524 <sub>-1</sub>	58651 <sub>-1</sub>
0.40	58779 <sub>-1</sub>	58906 <sub>-1</sub>	59032 <sub>-1</sub>	59159 <sub>-1</sub>	59286 <sub>-1</sub>	59412 <sub>-1</sub>	59538 <sub>-1</sub>	59665 <sub>-1</sub>	59790 <sub>-1</sub>	59916 <sub>-1</sub>
0.41	60042 <sub>-1</sub>	60168 <sub>-1</sub>	60293 <sub>-1</sub>	60418 <sub>-1</sub>	60543 <sub>-1</sub>	60668 <sub>-1</sub>	60793 <sub>-1</sub>	60918 <sub>-1</sub>	61042 <sub>-1</sub>	61167 <sub>-1</sub>
0.42	61291 <sub>-1</sub>	61415 <sub>-1</sub>	61539 <sub>-1</sub>	61662 <sub>-1</sub>	61786 <sub>-1</sub>	61909 <sub>-1</sub>	62033 <sub>-1</sub>	62156 <sub>-1</sub>	62279 <sub>-1</sub>	62402 <sub>-1</sub>
0.43	62524 <sub>-1</sub>	62647 <sub>-1</sub>	62769 <sub>-1</sub>	62891 <sub>-1</sub>	63013 <sub>-1</sub>	63135 <sub>-1</sub>	63257 <sub>-1</sub>	63379 <sub>-1</sub>	63500 <sub>-1</sub>	63621 <sub>-1</sub>
0.44	63742 <sub>-1</sub>	63863 <sub>-1</sub>	63984 <sub>-1</sub>	64105 <sub>-1</sub>	64225 <sub>-1</sub>	64346 <sub>-1</sub>	64466 <sub>-1</sub>	64586 <sub>-1</sub>	64706 <sub>-1</sub>	64825 <sub>-1</sub>
0.45	64945 <sub>-1</sub>	65064 <sub>-1</sub>	65183 <sub>-1</sub>	65302 <sub>-1</sub>	65421 <sub>-1</sub>	65540 <sub>-1</sub>	65659 <sub>-1</sub>	65777 <sub>-1</sub>	65895 <sub>-1</sub>	66013 <sub>-1</sub>

0.46	66131 <sub>-1</sub>	66249 <sub>-1</sub>	66367 <sub>-1</sub>	66484 <sub>-1</sub>	66601 <sub>-1</sub>	66718 <sub>-1</sub>	66835 <sub>-1</sub>	66952 <sub>-1</sub>	67069 <sub>-1</sub>	67185 <sub>-1</sub>
0.47	67301 <sub>-1</sub>	67417 <sub>-1</sub>	67533 <sub>-1</sub>	67649 <sub>-1</sub>	67765 <sub>-1</sub>	67880 <sub>-1</sub>	67995 <sub>-1</sub>	68110 <sub>-1</sub>	68225 <sub>-1</sub>	68340 <sub>-1</sub>
0.48	68455 <sub>-1</sub>	68569 <sub>-1</sub>	68683 <sub>-1</sub>	68797 <sub>-1</sub>	68911 <sub>-1</sub>	69025 <sub>-1</sub>	69139 <sub>-1</sub>	69252 <sub>-1</sub>	69365 <sub>-1</sub>	69478 <sub>-1</sub>
0.49	69591 <sub>-1</sub>	69704 <sub>-1</sub>	69817 <sub>-1</sub>	69929 <sub>-1</sub>	70041 <sub>-1</sub>	70153 <sub>-1</sub>	70265 <sub>-1</sub>	70377 <sub>-1</sub>	70488 <sub>-1</sub>	70600 <sub>-1</sub>
0.50	70711 <sub>-1</sub>	70822 <sub>-1</sub>	70932 <sub>-1</sub>	71043 <sub>-1</sub>	71154 <sub>-1</sub>	71264 <sub>-1</sub>	71374 <sub>-1</sub>	71484 <sub>-1</sub>	71594 <sub>-1</sub>	71703 <sub>-1</sub>
0.51	71813 <sub>-1</sub>	71922 <sub>-1</sub>	72031 <sub>-1</sub>	72140 <sub>-1</sub>	72248 <sub>-1</sub>	72357 <sub>-1</sub>	72465 <sub>-1</sub>	72573 <sub>-1</sub>	72681 <sub>-1</sub>	72789 <sub>-1</sub>
0.52	72897 <sub>-1</sub>	73004 <sub>-1</sub>	73112 <sub>-1</sub>	73219 <sub>-1</sub>	73326 <sub>-1</sub>	73432 <sub>-1</sub>	73539 <sub>-1</sub>	73645 <sub>-1</sub>	73751 <sub>-1</sub>	73857 <sub>-1</sub>
0.53	73963 <sub>-1</sub>	74069 <sub>-1</sub>	74174 <sub>-1</sub>	74279 <sub>-1</sub>	74385 <sub>-1</sub>	74489 <sub>-1</sub>	74594 <sub>-1</sub>	74699 <sub>-1</sub>	74803 <sub>-1</sub>	74907 <sub>-1</sub>
0.54	75011 <sub>-1</sub>	75115 <sub>-1</sub>	75218 <sub>-1</sub>	75322 <sub>-1</sub>	75425 <sub>-1</sub>	75528 <sub>-1</sub>	75631 <sub>-1</sub>	75734 <sub>-1</sub>	75836 <sub>-1</sub>	75938 <sub>-1</sub>
0.55	76041 <sub>-1</sub>	76143 <sub>-1</sub>	76244 <sub>-1</sub>	76346 <sub>-1</sub>	76447 <sub>-1</sub>	76548 <sub>-1</sub>	76649 <sub>-1</sub>	76750 <sub>-1</sub>	76851 <sub>-1</sub>	76951 <sub>-1</sub>
0.56	77051 <sub>-1</sub>	77151 <sub>-1</sub>	77251 <sub>-1</sub>	77351 <sub>-1</sub>	77450 <sub>-1</sub>	77550 <sub>-1</sub>	77649 <sub>-1</sub>	77748 <sub>-1</sub>	77846 <sub>-1</sub>	77945 <sub>-1</sub>
0.57	78043 <sub>-1</sub>	78141 <sub>-1</sub>	78239 <sub>-1</sub>	78337 <sub>-1</sub>	78434 <sub>-1</sub>	78532 <sub>-1</sub>	78629 <sub>-1</sub>	78726 <sub>-1</sub>	78823 <sub>-1</sub>	78919 <sub>-1</sub>
0.58	79016 <sub>-1</sub>	79112 <sub>-1</sub>	79208 <sub>-1</sub>	79303 <sub>-1</sub>	79399 <sub>-1</sub>	79494 <sub>-1</sub>	79590 <sub>-1</sub>	79685 <sub>-1</sub>	79779 <sub>-1</sub>	79874 <sub>-1</sub>
0.59	79968 <sub>-1</sub>	80063 <sub>-1</sub>	80157 <sub>-1</sub>	80251 <sub>-1</sub>	80344 <sub>-1</sub>	80438 <sub>-1</sub>	80531 <sub>-1</sub>	80624 <sub>-1</sub>	80717 <sub>-1</sub>	80809 <sub>-1</sub>
0.60	80902 <sub>-1</sub>	80994 <sub>-1</sub>	81086 <sub>-1</sub>	81178 <sub>-1</sub>	81269 <sub>-1</sub>	81361 <sub>-1</sub>	81452 <sub>-1</sub>	81543 <sub>-1</sub>	81634 <sub>-1</sub>	81725 <sub>-1</sub>
0.61	81815 <sub>-1</sub>	81905 <sub>-1</sub>	81995 <sub>-1</sub>	82085 <sub>-1</sub>	82175 <sub>-1</sub>	82264 <sub>-1</sub>	82353 <sub>-1</sub>	82442 <sub>-1</sub>	82531 <sub>-1</sub>	82620 <sub>-1</sub>
0.62	82708 <sub>-1</sub>	82796 <sub>-1</sub>	82884 <sub>-1</sub>	82972 <sub>-1</sub>	83060 <sub>-1</sub>	83147 <sub>-1</sub>	83234 <sub>-1</sub>	83321 <sub>-1</sub>	83408 <sub>-1</sub>	83494 <sub>-1</sub>
0.63	83581 <sub>-1</sub>	83667 <sub>-1</sub>	83753 <sub>-1</sub>	83839 <sub>-1</sub>	83924 <sub>-1</sub>	84009 <sub>-1</sub>	84094 <sub>-1</sub>	84179 <sub>-1</sub>	84264 <sub>-1</sub>	84349 <sub>-1</sub>
0.64	84433 <sub>-1</sub>	84517 <sub>-1</sub>	84601 <sub>-1</sub>	84684 <sub>-1</sub>	84768 <sub>-1</sub>	84851 <sub>-1</sub>	84934 <sub>-1</sub>	85017 <sub>-1</sub>	85099 <sub>-1</sub>	85182 <sub>-1</sub>
0.65	85264 <sub>-1</sub>	85346 <sub>-1</sub>	85428 <sub>-1</sub>	85509 <sub>-1</sub>	85591 <sub>-1</sub>	85672 <sub>-1</sub>	85753 <sub>-1</sub>	85833 <sub>-1</sub>	85914 <sub>-1</sub>	85994 <sub>-1</sub>
0.66	86074 <sub>-1</sub>	86154 <sub>-1</sub>	86234 <sub>-1</sub>	86313 <sub>-1</sub>	86392 <sub>-1</sub>	86471 <sub>-1</sub>	86550 <sub>-1</sub>	86629 <sub>-1</sub>	86707 <sub>-1</sub>	86785 <sub>-1</sub>
0.67	86863 <sub>-1</sub>	86941 <sub>-1</sub>	87018 <sub>-1</sub>	87096 <sub>-1</sub>	87173 <sub>-1</sub>	87250 <sub>-1</sub>	87326 <sub>-1</sub>	87403 <sub>-1</sub>	87479 <sub>-1</sub>	87555 <sub>-1</sub>
0.68	87631 <sub>-1</sub>	87706 <sub>-1</sub>	87782 <sub>-1</sub>	87857 <sub>-1</sub>	87932 <sub>-1</sub>	88006 <sub>-1</sub>	88081 <sub>-1</sub>	88155 <sub>-1</sub>	88229 <sub>-1</sub>	88303 <sub>-1</sub>
0.69	88377 <sub>-1</sub>	88450 <sub>-1</sub>	88523 <sub>-1</sub>	88596 <sub>-1</sub>	88669 <sub>-1</sub>	88741 <sub>-1</sub>	88814 <sub>-1</sub>	88886 <sub>-1</sub>	88958 <sub>-1</sub>	89029 <sub>-1</sub>
0.70	89101 <sub>-1</sub>	89172 <sub>-1</sub>	89243 <sub>-1</sub>	89314 <sub>-1</sub>	89384 <sub>-1</sub>	89454 <sub>-1</sub>	89525 <sub>-1</sub>	89594 <sub>-1</sub>	89664 <sub>-1</sub>	89734 <sub>-1</sub>
0.71	89803 <sub>-1</sub>	89872 <sub>-1</sub>	89941 <sub>-1</sub>	90009 <sub>-1</sub>	90077 <sub>-1</sub>	90146 <sub>-1</sub>	90213 <sub>-1</sub>	90281 <sub>-1</sub>	90348 <sub>-1</sub>	90416 <sub>-1</sub>
0.72	90483 <sub>-1</sub>	90549 <sub>-1</sub>	90616 <sub>-1</sub>	90682 <sub>-1</sub>	90748 <sub>-1</sub>	90814 <sub>-1</sub>	90880 <sub>-1</sub>	90945 <sub>-1</sub>	91011 <sub>-1</sub>	91076 <sub>-1</sub>
0.73	91140 <sub>-1</sub>	91205 <sub>-1</sub>	91269 <sub>-1</sub>	91333 <sub>-1</sub>	91397 <sub>-1</sub>	91461 <sub>-1</sub>	91524 <sub>-1</sub>	91587 <sub>-1</sub>	91650 <sub>-1</sub>	91713 <sub>-1</sub>
0.74	91775 <sub>-1</sub>	91838 <sub>-1</sub>	91900 <sub>-1</sub>	91962 <sub>-1</sub>	92023 <sub>-1</sub>	92085 <sub>-1</sub>	92146 <sub>-1</sub>	92207 <sub>-1</sub>	92267 <sub>-1</sub>	92328 <sub>-1</sub>
0.75	92388 <sub>-1</sub>	92448 <sub>-1</sub>	92508 <sub>-1</sub>	92567 <sub>-1</sub>	92627 <sub>-1</sub>	92686 <sub>-1</sub>	92745 <sub>-1</sub>	92803 <sub>-1</sub>	92862 <sub>-1</sub>	92920 <sub>-1</sub>
0.76	92978 <sub>-1</sub>	93035 <sub>-1</sub>	93093 <sub>-1</sub>	93150 <sub>-1</sub>	93207 <sub>-1</sub>	93264 <sub>-1</sub>	93320 <sub>-1</sub>	93377 <sub>-1</sub>	93433 <sub>-1</sub>	93489 <sub>-1</sub>
0.77	93544 <sub>-1</sub>	93600 <sub>-1</sub>	93655 <sub>-1</sub>	93710 <sub>-1</sub>	93765 <sub>-1</sub>	93819 <sub>-1</sub>	93873 <sub>-1</sub>	93927 <sub>-1</sub>	93981 <sub>-1</sub>	94035 <sub>-1</sub>
0.78	94088 <sub>-1</sub>	94141 <sub>-1</sub>	94194 <sub>-1</sub>	94247 <sub>-1</sub>	94299 <sub>-1</sub>	94351 <sub>-1</sub>	94403 <sub>-1</sub>	94455 <sub>-1</sub>	94506 <sub>-1</sub>	94558 <sub>-1</sub>
0.79	94609 <sub>-1</sub>	94659 <sub>-1</sub>	94710 <sub>-1</sub>	94760 <sub>-1</sub>	94810 <sub>-1</sub>	94860 <sub>-1</sub>	94910 <sub>-1</sub>	94959 <sub>-1</sub>	95008 <sub>-1</sub>	95057 <sub>-1</sub>
0.80	95106 <sub>-1</sub>	95154 <sub>-1</sub>	95202 <sub>-1</sub>	95250 <sub>-1</sub>	95298 <sub>-1</sub>	95345 <sub>-1</sub>	95393 <sub>-1</sub>	95440 <sub>-1</sub>	95486 <sub>-1</sub>	95533 <sub>-1</sub>
0.81	95579 <sub>-1</sub>	95625 <sub>-1</sub>	95671 <sub>-1</sub>	95717 <sub>-1</sub>	95762 <sub>-1</sub>	95807 <sub>-1</sub>	95852 <sub>-1</sub>	95897 <sub>-1</sub>	95941 <sub>-1</sub>	95985 <sub>-1</sub>
0.82	96029 <sub>-1</sub>	96073 <sub>-1</sub>	96117 <sub>-1</sub>	96160 <sub>-1</sub>	96203 <sub>-1</sub>	96246 <sub>-1</sub>	96288 <sub>-1</sub>	96330 <sub>-1</sub>	96372 <sub>-1</sub>	96414 <sub>-1</sub>
0.83	96456 <sub>-1</sub>	96497 <sub>-1</sub>	96538 <sub>-1</sub>	96579 <sub>-1</sub>	96620 <sub>-1</sub>	96660 <sub>-1</sub>	96700 <sub>-1</sub>	96740 <sub>-1</sub>	96780 <sub>-1</sub>	96819 <sub>-1</sub>
0.84	96858 <sub>-1</sub>	96897 <sub>-1</sub>	96936 <sub>-1</sub>	96974 <sub>-1</sub>	97013 <sub>-1</sub>	97051 <sub>-1</sub>	97088 <sub>-1</sub>	97126 <sub>-1</sub>	97163 <sub>-1</sub>	97200 <sub>-1</sub>
0.85	97237 <sub>-1</sub>	97274 <sub>-1</sub>	97310 <sub>-1</sub>	97346 <sub>-1</sub>	97382 <sub>-1</sub>	97417 <sub>-1</sub>	97453 <sub>-1</sub>	97488 <sub>-1</sub>	97523 <sub>-1</sub>	97557 <sub>-1</sub>
0.86	97592 <sub>-1</sub>	97626 <sub>-1</sub>	97660 <sub>-1</sub>	97693 <sub>-1</sub>	97727 <sub>-1</sub>	97760 <sub>-1</sub>	97793 <sub>-1</sub>	97826 <sub>-1</sub>	97858 <sub>-1</sub>	97890 <sub>-1</sub>
0.87	97922 <sub>-1</sub>	97954 <sub>-1</sub>	97986 <sub>-1</sub>	98017 <sub>-1</sub>	98048 <sub>-1</sub>	98079 <sub>-1</sub>	98109 <sub>-1</sub>	98139 <sub>-1</sub>	98169 <sub>-1</sub>	98199 <sub>-1</sub>
0.88	98229 <sub>-1</sub>	98258 <sub>-1</sub>	98287 <sub>-1</sub>	98316 <sub>-1</sub>	98345 <sub>-1</sub>	98373 <sub>-1</sub>	98401 <sub>-1</sub>	98429 <sub>-1</sub>	98456 <sub>-1</sub>	98484 <sub>-1</sub>
0.89	98511 <sub>-1</sub>	98538 <sub>-1</sub>	98564 <sub>-1</sub>	98591 <sub>-1</sub>	98617 <sub>-1</sub>	98643 <sub>-1</sub>	98669 <sub>-1</sub>	98694 <sub>-1</sub>	98719 <sub>-1</sub>	98744 <sub>-1</sub>
0.90	98769 <sub>-1</sub>	98793 <sub>-1</sub>	98817 <sub>-1</sub>	98841 <sub>-1</sub>	98865 <sub>-1</sub>	98889 <sub>-1</sub>	98912 <sub>-1</sub>	98935 <sub>-1</sub>	98958 <sub>-1</sub>	98980 <sub>-1</sub>
0.91	99002 <sub>-1</sub>	99024 <sub>-1</sub>	99046 <sub>-1</sub>	99068 <sub>-1</sub>	99089 <sub>-1</sub>	99110 <sub>-1</sub>	99131 <sub>-1</sub>	99151 <sub>-1</sub>	99172 <sub>-1</sub>	99192 <sub>-1</sub>
0.92	99211 <sub>-1</sub>	99231 <sub>-1</sub>	99250 <sub>-1</sub>	99269 <sub>-1</sub>	99288 <sub>-1</sub>	99307 <sub>-1</sub>	99325 <sub>-1</sub>	99343 <sub>-1</sub>	99361 <sub>-1</sub>	99379 <sub>-1</sub>
0.93	99396 <sub>-1</sub>	99413 <sub>-1</sub>	99430 <sub>-1</sub>	99447 <sub>-1</sub>	99463 <sub>-1</sub>	99479 <sub>-1</sub>	99495 <sub>-1</sub>	99511 <sub>-1</sub>	99526 <sub>-1</sub>	99541 <sub>-1</sub>
0.94	99556 <sub>-1</sub>	99571 <sub>-1</sub>	99585 <sub>-1</sub>	99599 <sub>-1</sub>	99613 <sub>-1</sub>	99627 <sub>-1</sub>	99640 <sub>-1</sub>	99654 <sub>-1</sub>	99667 <sub>-1</sub>	99679 <sub>-1</sub>
0.95	99692 <sub>-1</sub>	99704 <sub>-1</sub>	99716 <sub>-1</sub>	99728 <sub>-1</sub>	99739 <sub>-1</sub>	99750 <sub>-1</sub>	99761 <sub>-1</sub>	99772 <sub>-1</sub>	99782 <sub>-1</sub>	99793 <sub>-1</sub>

0.96	99803 <sub>-1</sub>	99812 <sub>-1</sub>	99822 <sub>-1</sub>	99831 <sub>-1</sub>	99840 <sub>-1</sub>	99849 <sub>-1</sub>	99857 <sub>-1</sub>	99866 <sub>-1</sub>	99874 <sub>-1</sub>	99881 <sub>-1</sub>
0.97	99889 <sub>-1</sub>	99896 <sub>-1</sub>	99903 <sub>-1</sub>	99910 <sub>-1</sub>	99917 <sub>-1</sub>	99923 <sub>-1</sub>	99929 <sub>-1</sub>	99935 <sub>-1</sub>	99940 <sub>-1</sub>	99946 <sub>-1</sub>
0.98	99951 <sub>-1</sub>	99955 <sub>-1</sub>	99960 <sub>-1</sub>	99964 <sub>-1</sub>	99968 <sub>-1</sub>	99972 <sub>-1</sub>	99976 <sub>-1</sub>	99979 <sub>-1</sub>	99982 <sub>-1</sub>	99985 <sub>-1</sub>
0.99	99988 <sub>-1</sub>	99990 <sub>-1</sub>	99992 <sub>-1</sub>	99994 <sub>-1</sub>	99996 <sub>-1</sub>	99997 <sub>-1</sub>	99998 <sub>-1</sub>	99999 <sub>-1</sub>	10000 <sub>+0</sub>	10000 <sub>+0</sub>

### 추가 함숫값

- $\Delta x \gg 0$  일 때,

$$\sin\left(\frac{\pi}{2}(x + \Delta x)\right) \approx \sin\left(\frac{\pi}{2}x\right) + \frac{\pi}{2}\sqrt{1 - \sin^2\left(\frac{\pi}{2}x\right)}\Delta x$$

$\Delta x \leq 0.0005$  일 때, 최대 0.00003% 오차를 가진다.

# 정규분포표

\*  $Z \sim N(0, 1^2)$  일 때  $P(0 \leq Z \leq z)$  의 값

$z$	0	1	2	3	4	5	6	7	8	9
0.0	0	39894 <sub>-3</sub>	79783 <sub>-3</sub>	11966 <sub>-2</sub>	15953 <sub>-2</sub>	19939 <sub>-2</sub>	23922 <sub>-2</sub>	27903 <sub>-2</sub>	31881 <sub>-2</sub>	35856 <sub>-2</sub>
0.1	39828 <sub>-2</sub>	43795 <sub>-2</sub>	47758 <sub>-2</sub>	51717 <sub>-2</sub>	55670 <sub>-2</sub>	59618 <sub>-2</sub>	63559 <sub>-2</sub>	67495 <sub>-2</sub>	71424 <sub>-2</sub>	75345 <sub>-2</sub>
0.2	79260 <sub>-2</sub>	83166 <sub>-2</sub>	87064 <sub>-2</sub>	90954 <sub>-2</sub>	94835 <sub>-2</sub>	98706 <sub>-2</sub>	10257 <sub>-1</sub>	10642 <sub>-1</sub>	11026 <sub>-1</sub>	11409 <sub>-1</sub>
0.3	11791 <sub>-1</sub>	12172 <sub>-1</sub>	12552 <sub>-1</sub>	12930 <sub>-1</sub>	13307 <sub>-1</sub>	13683 <sub>-1</sub>	14058 <sub>-1</sub>	14431 <sub>-1</sub>	14803 <sub>-1</sub>	15173 <sub>-1</sub>
0.4	15542 <sub>-1</sub>	15910 <sub>-1</sub>	16276 <sub>-1</sub>	16640 <sub>-1</sub>	17003 <sub>-1</sub>	17364 <sub>-1</sub>	17724 <sub>-1</sub>	18082 <sub>-1</sub>	18439 <sub>-1</sub>	18793 <sub>-1</sub>
0.5	19146 <sub>-1</sub>	19497 <sub>-1</sub>	19847 <sub>-1</sub>	20194 <sub>-1</sub>	20540 <sub>-1</sub>	20884 <sub>-1</sub>	21226 <sub>-1</sub>	21566 <sub>-1</sub>	21904 <sub>-1</sub>	22240 <sub>-1</sub>
0.6	22575 <sub>-1</sub>	22907 <sub>-1</sub>	23237 <sub>-1</sub>	23565 <sub>-1</sub>	23891 <sub>-1</sub>	24215 <sub>-1</sub>	24537 <sub>-1</sub>	24857 <sub>-1</sub>	25175 <sub>-1</sub>	25490 <sub>-1</sub>
0.7	25804 <sub>-1</sub>	26115 <sub>-1</sub>	26424 <sub>-1</sub>	26730 <sub>-1</sub>	27035 <sub>-1</sub>	27337 <sub>-1</sub>	27637 <sub>-1</sub>	27935 <sub>-1</sub>	28230 <sub>-1</sub>	28524 <sub>-1</sub>
0.8	28814 <sub>-1</sub>	29103 <sub>-1</sub>	29389 <sub>-1</sub>	29673 <sub>-1</sub>	29955 <sub>-1</sub>	30234 <sub>-1</sub>	30511 <sub>-1</sub>	30785 <sub>-1</sub>	31057 <sub>-1</sub>	31327 <sub>-1</sub>
0.9	31594 <sub>-1</sub>	31859 <sub>-1</sub>	32121 <sub>-1</sub>	32381 <sub>-1</sub>	32639 <sub>-1</sub>	32894 <sub>-1</sub>	33147 <sub>-1</sub>	33398 <sub>-1</sub>	33646 <sub>-1</sub>	33891 <sub>-1</sub>
1.0	34134 <sub>-1</sub>	34375 <sub>-1</sub>	34614 <sub>-1</sub>	34849 <sub>-1</sub>	35083 <sub>-1</sub>	35314 <sub>-1</sub>	35543 <sub>-1</sub>	35769 <sub>-1</sub>	35993 <sub>-1</sub>	36214 <sub>-1</sub>
1.1	36433 <sub>-1</sub>	36650 <sub>-1</sub>	36864 <sub>-1</sub>	37076 <sub>-1</sub>	37286 <sub>-1</sub>	37493 <sub>-1</sub>	37698 <sub>-1</sub>	37900 <sub>-1</sub>	38100 <sub>-1</sub>	38298 <sub>-1</sub>
1.2	38493 <sub>-1</sub>	38686 <sub>-1</sub>	38877 <sub>-1</sub>	39065 <sub>-1</sub>	39251 <sub>-1</sub>	39435 <sub>-1</sub>	39617 <sub>-1</sub>	39796 <sub>-1</sub>	39973 <sub>-1</sub>	40147 <sub>-1</sub>
1.3	40320 <sub>-1</sub>	40490 <sub>-1</sub>	40658 <sub>-1</sub>	40824 <sub>-1</sub>	40988 <sub>-1</sub>	41149 <sub>-1</sub>	41309 <sub>-1</sub>	41466 <sub>-1</sub>	41621 <sub>-1</sub>	41774 <sub>-1</sub>
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14867	14869	14879	14887	14891	14897	14923	14929	14939	14947	14951	14957
14969	14983	15013	15017	15031	15053	15061	15073	15077	15083	15091	15101
15107	15121	15131	15137	15139	15149	15161	15173	15187	15193	15199	15217
15227	15233	15241	15259	15263	15269	15271	15277	15287	15289	15299	15307

15313	15319	15329	15331	15349	15359	15361	15373	15377	15383	15391	15401
15413	15427	15439	15443	15451	15461	15467	15473	15493	15497	15511	15527
15541	15551	15559	15569	15581	15583	15601	15607	15619	15629	15641	15643
15647	15649	15661	15667	15671	15679	15683	15727	15731	15733	15737	15739
15749	15761	15767	15773	15787	15791	15797	15803	15809	15817	15823	15859
15877	15881	15887	15889	15901	15907	15913	15919	15923	15937	15959	15971
15973	15991	16001	16007	16033	16057	16061	16063	16067	16069	16073	16087
16091	16097	16103	16111	16127	16139	16141	16183	16187	16189	16193	16217
16223	16229	16231	16249	16253	16267	16273	16301	16319	16333	16339	16349
16361	16363	16369	16381	16411	16417	16421	16427	16433	16447	16451	16453
16477	16481	16487	16493	16519	16529	16547	16553	16561	16567	16573	16603
16607	16619	16631	16633	16649	16651	16657	16661	16673	16691	16693	16699
16703	16729	16741	16747	16759	16763	16787	16811	16823	16829	16831	16843
16871	16879	16883	16889	16901	16903	16921	16927	16931	16937	16943	16963
16979	16981	16987	16993	17011	17021	17027	17029	17033	17041	17047	17053
17077	17093	17099	17107	17117	17123	17137	17159	17167	17183	17189	17191
17203	17207	17209	17231	17239	17257	17291	17293	17299	17317	17321	17327
17333	17341	17351	17359	17377	17383	17387	17389	17393	17401	17417	17419
17431	17443	17449	17467	17471	17477	17483	17489	17491	17497	17509	17519
17539	17551	17569	17573	17579	17581	17597	17599	17609	17623	17627	17657
17659	17669	17681	17683	17707	17713	17729	17737	17747	17749	17761	17783
17789	17791	17807	17827	17837	17839	17851	17863	17881	17891	17903	17909
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18013	18041	18043	18047	18049	18059	18061	18077	18089	18097	18119	18121
18127	18131	18133	18143	18149	18169	18181	18191	18199	18211	18217	18223
18229	18233	18251	18253	18257	18269	18287	18289	18301	18307	18311	18313
18329	18341	18353	18367	18371	18379	18397	18401	18413	18427	18433	18439
18443	18451	18457	18461	18481	18493	18503	18517	18521	18523	18539	18541
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18719	18731	18743	18749	18757	18773	18787	18793	18797	18803	18839	18859
18869	18899	18911	18913	18917	18919	18947	18959	18973	18979	19001	19009
19013	19031	19037	19051	19069	19073	19079	19081	19087	19121	19139	19141
19157	19163	19181	19183	19207	19211	19213	19219	19231	19237	19249	19259
19267	19273	19289	19301	19309	19319	19333	19373	19379	19381	19387	19391
19403	19417	19421	19423	19427	19429	19433	19441	19447	19457	19463	19469
19471	19477	19483	19489	19501	19507	19531	19541	19543	19553	19559	19571
19577	19583	19597	19603	19609	19661	19681	19687	19697	19699	19709	19717
19727	19739	19751	19753	19759	19763	19777	19793	19801	19813	19819	19841
19843	19853	19861	19867	19889	19891	19913	19919	19927	19937	19949	19961
19963	19973	19979	19991	19993	19997	20011	20021	20023	20029	20047	20051
20063	20071	20089	20101	20107	20113	20117	20123	20129	20143	20147	20149
20161	20173	20177	20183	20201	20219	20231	20233	20249	20261	20269	20287
20297	20323	20327	20333	20341	20347	20353	20357	20359	20369	20389	20393
20399	20407	20411	20431	20441	20443	20477	20479	20483	20507	20509	20521
20533	20543	20549	20551	20563	20593	20599	20611	20627	20639	20641	20663
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20773	20789	20807	20809	20849	20857	20873	20879	20887	20897	20899	20903
20921	20929	20939	20947	20959	20963	20981	20983	21001	21011	21013	21017
21019	21023	21031	21059	21061	21067	21089	21101	21107	21121	21139	21143
21149	21157	21163	21169	21179	21187	21191	21193	21211	21221	21227	21247

21269	21277	21283	21313	21317	21319	21323	21341	21347	21377	21379	21383
21391	21397	21401	21407	21419	21433	21467	21481	21487	21491	21493	21499
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21599	21601	21611	21613	21617	21647	21649	21661	21673	21683	21701	21713
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21839	21841	21851	21859	21863	21871	21881	21893	21911	21929	21937	21943
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22067	22073	22079	22091	22093	22109	22111	22123	22129	22133	22147	22153
22157	22159	22171	22189	22193	22229	22247	22259	22271	22273	22277	22279
22283	22291	22303	22307	22343	22349	22367	22369	22381	22391	22397	22409
22433	22441	22447	22453	22469	22481	22483	22501	22511	22531	22541	22543
22549	22567	22571	22573	22613	22619	22621	22637	22639	22643	22651	22669
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23117	23131	23143	23159	23167	23173	23189	23197	23201	23203	23209	23227
23251	23269	23279	23291	23293	23297	23311	23321	23327	23333	23339	23357
23369	23371	23399	23417	23431	23447	23459	23473	23497	23509	23531	23537
23539	23549	23557	23561	23563	23567	23581	23593	23599	23603	23609	23623
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23747	23753	23761	23767	23773	23789	23801	23813	23819	23827	23831	23833
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24071	24077	24083	24091	24097	24103	24107	24109	24113	24121	24133	24137
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24317	24329	24337	24359	24371	24373	24379	24391	24407	24413	24419	24421
24439	24443	24469	24473	24481	24499	24509	24517	24527	24533	24547	24551
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24733	24749	24763	24767	24781	24793	24799	24809	24821	24841	24847	24851
24859	24877	24889	24907	24917	24919	24923	24943	24953	24967	24971	24977
24979	24989	25013	25031	25033	25037	25057	25073	25087	25097	25111	25117
25121	25127	25147	25153	25163	25169	25171	25183	25189	25219	25229	25237
25243	25247	25253	25261	25301	25303	25307	25309	25321	25339	25343	25349
25357	25367	25373	25391	25409	25411	25423	25439	25447	25453	25457	25463
25469	25471	25523	25537	25541	25561	25577	25579	25583	25589	25601	25603
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25733	25741	25747	25759	25763	25771	25793	25799	25801	25819	25841	25847
25849	25867	25873	25889	25903	25913	25919	25931	25933	25939	25943	25951
25969	25981	25997	25999	26003	26017	26021	26029	26041	26053	26083	26099
26107	26111	26113	26119	26141	26153	26161	26171	26177	26183	26189	26203
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26437	26449	26459	26479	26489	26497	26501	26513	26539	26557	26561	26573
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26701	26711	26713	26717	26723	26729	26731	26737	26759	26777	26783	26801
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26921	26927	26947	26951	26953	26959	26981	26987	26993	27011	27017	27031
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27179	27191	27197	27211	27239	27241	27253	27259	27271	27277	27281	27283

27299	27329	27337	27361	27367	27397	27407	27409	27427	27431	27437	27449
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