NUEVAS TABLAS NÁUTICAS DE ALTURA Y AZIMUT,

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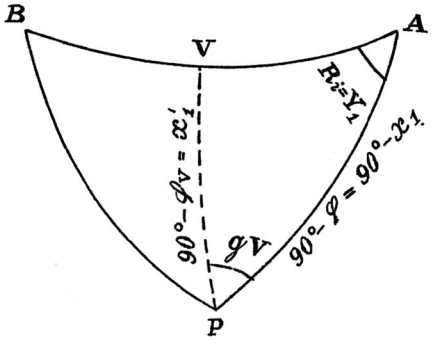
(Conclusión).

Las tablas permiten obtener también las coordenadas del vértice de la ortodrómica, lo cual es necesario conocer cuando los puntos considerados se encuentran en el mismo hemisferio.



En la figura adjunta tenemos que A es el punto de salida, V el vértice, $Ri = Y_1$ el rumbo inicial, $90° - \varphi = x_1$ la colatitud de de salida, $90° - \varphi\, v = x'_1$ la colatitud del vértica y gv la longitud del vértice a partir desde el punto de salida.

El triángulo rectángulo APV nos dá:

$$\text{sen } PV = \text{sen } Ri \cos \varphi$$
$$\text{o bien sen } x'_1 = \text{sen } Y_1 \cos x_1$$

fórmula igual a la (1) y que por medio de ella se obtiene la latitud del vértice, operando en la página izquierda de las tablas.

El triángulo considerado dá también:

$$\cos gv = \text{tanj}\ \varphi\ \text{cotanj}\ \varphi\ v$$
$$\text{o bien cotanj}\ \varphi\ v = \cos gr\ \text{cotanj}\ \varphi$$
$$\text{o también cotanj}\ (90^\circ - x'_1) = \cos gr\ \text{cotanj}\ x_1$$

fórmula igual a la (2) y con cuyo auxilio se obtiene la diferencia en longitud del vértice, operando en la página derecha de las tablas.

Ejemplo X.—Datos del Ejemplo VIII.

$$\varphi = -33^\circ\ 02'$$
$$Ri = \text{S. } 41^\circ \text{ W.}$$

CÁLCULO DE LA LATITUD DEL VÉRTICE.

$$\varphi = -33^\circ\ 02' = x_1 \qquad x'_1 = +33^\circ\ 22'.0 = 90^\circ - \varphi$$
$$Ri = +41^\circ\ 00' = Y_1$$
$$\varphi\ v = -56^\circ\ 38'.0$$

Veamos el resultado empleando logaritmos.

$$\text{sen}\ (90^\circ - \varphi\ v) = \cos \varphi\ v = \text{sen}\ Ri \cos \varphi$$
$$\varphi = -33^\circ\ 02 \qquad \log \cos = 1{,}923427$$
$$Ri = +41^\circ\ 00' \qquad \log \text{sen} = \bar{1}{,}816943$$
$$\log \cos \varphi\ v = \bar{1}{,}740370$$
$$\varphi\ v = -56^\circ\ 37'\ 48''$$

CÁLCULO DE LA DIFERENCIA EN LONGITUD DEL VÉRTICE.

$$x_1 = -33^\circ\ 02'$$
$$90^\circ - \varphi = x'_1 = \quad 56^\circ\ 38'$$

En la página de la derecha, con $x_1 = 33^\circ$ y siguiendo horizontalmente hasta encontrar el valor más próximo menor a $x'_1 = 56^\circ\ 38$, deducimos que éste es $55^\circ\ 58'.8$ con diferencia tabular $= 60'$. El encabezamiento de la columna vertical que contiene a éste es $Y_1 = 64^\circ$.

Para $60'$ y $2'$ la tabla de partes proporcionales dá $+\ 2'$.

$$\begin{array}{r} 55^\circ\ 58'.8 \\ +\ \ 2'.0 \\ \hline 56^\circ\ 00'.8 \end{array} \quad \text{para} \left\{ \begin{array}{l} Y_1 = 64^\circ\ 00' \\ x_1 = 33^\circ\ 02' \end{array} \right.$$

La misma línea horizontal nos dá 56° 56'.7, diferencia tabular = 59'.1 como valor más próximo mayor a $x'_1 = 56^\circ\ 38'$ y correspondiente a $Y_1 = 65^\circ$.

Para 59'.1 y 2' la tabla de partes proporcionales dá + 1'.9.

$$\begin{array}{r} 56^\circ\ 56'.7 \\ +\ \ 1'.9 \\ \hline 56^\circ\ 58'.6 \end{array} \quad \text{para} \left\{ \begin{array}{l} Y_1 = 65^\circ\ 00' \\ x_1 = 33^\circ\ 02' \end{array} \right.$$

Entonces tenemos:

$$\begin{array}{rrrl} & 56^\circ & 58'.6 & \text{para } Y_1 = 65^\circ \\ & 56^\circ & 00'.8 & \text{»} \quad Y_1 = 64^\circ \\ \hline \text{Dif.}^a = & & +\ 57'.8 & \text{en } 1^\circ \text{ o sean } 60 \end{array}$$

$$\text{o bien en } 1' = \frac{60'}{57.8} = 1',04$$

Por otra parte

$$\begin{array}{rrr} & 56^\circ & 38'.0 \\ & 56^\circ & 00'.8 \\ \hline \text{Dif.}^a = & + & 37'.7 \end{array}$$

Luego:

$$37',2 \times 1'.04 = +\ 38\ .7$$

Obtenemos finalmente

$$\begin{array}{rrr} & 64^\circ & 00' \\ & + & 38'.7 \\ \hline gv = & 64^\circ & 38'.7 \end{array}$$

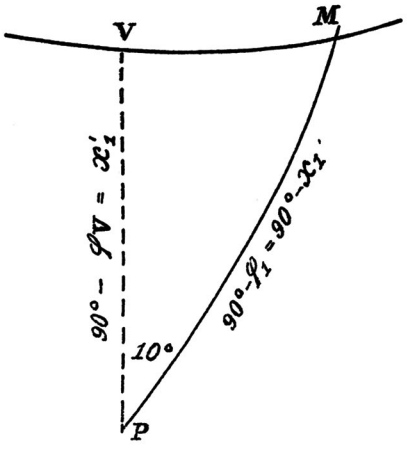
Por medio de logaritmos comprobemos el resultado:

$$\cos gv = \text{tanj}\ \varphi\ \text{cotanj}\ \varphi\ v$$

$$\varphi = -33^\circ\ 02' \qquad \log \text{tanj} = \bar{1}.813070$$
$$\varphi r = -56^\circ\ 38' \qquad \log \text{cotanj} = \bar{1}.818585$$

$$\log \cos gv = 1.631655$$
$$gr = 64^\circ\ 38'\ 46''.$$

De la misma manera se obtienen varios puntos de la ortodrómica a partir desde el vértice, haciendo variar la longitud de 10° en 10°, o de 5° en 5° según convenga, y aplicando la misma fórmula



anterior en el triángulo PMV de la figura adjunta.

$\cos 10^\circ = \text{tanj}\ \varphi_1\ \text{cotanj}\ \varphi\ v$, de donde:

$\text{tanj}\ \varphi_1 = \cos 10^\circ\ \text{tanj}\ \varphi\ v$, o bien:

$$\text{cotanj}\ x_1 = \cos 10^\circ\ \text{cotanj}\ x'_1$$

Usemos los mismos datos anteriores.

$$x'_1 = 90^\circ - \varphi\ v = 33^\circ\ 22'$$

Para $x = 33^\circ$ y $10^\circ = Y$, la tabla dá 33° 24'.1, diferencia tabular = 60'.4.

La tabla de partes proporcionales para 60'.4 y 2', dá + 22'.2.

$$33^\circ\ 24'.1$$
$$+\ 22'.2$$
$$x_1 = 33^\circ\ 46'.3 = 90^\circ - \varphi_1$$
$$\varphi_1 = 56^\circ\ 13'.7$$

Consideremos ahora un ángulo al polo de 20°.

Para $x = 33^\circ$ e $Y = 20^\circ$, la tabla dá 34° 38'.8, diferencia tabular = 61'.4

La tabla de partes proporcionales para 61',4 y 22, dá + 22'.5

$$34^\circ 38'.8$$
$$+\ 22'.5$$
$$x_1 = 35^\circ\ 01'.3 = 90^\circ - \varphi_2$$
$$\varphi_2 = 54^\circ\ 58'.7$$

Comprobemos estos resultados por medio del cálculo logarítmico.

$$\text{tanj}\ \varphi_1 = \cos 10^\circ\ \text{tanj}\ \varphi v$$
$$10^\circ\ 00'\ \log\cos = \bar{1},993351$$
$$\varphi v = 56^\circ\ 38\ \ \log\text{tanj} = 0,181415$$
$$\log\text{tanj}\ \varphi_1 = 0,174766$$
$$\varphi_1 = 56^\circ\ 13'\ 45''$$

$$\text{tanj}\ \phi_2 = \cos 20^\circ\ \text{tanj}\ \phi v$$
$$20^\circ\ 00'\ \log\cos = \bar{1},972986$$
$$\varphi v = 56^\circ\ 38'\ \log\text{tanj} = 0,181415$$
$$\log\text{tanj}\ \phi_2 = 0,154401$$
$$\varphi_2 = 54^\circ\ 58'\ 37''$$

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La determinación del ángulo al polo de un astro al nacer o ponerse verdaderos, semejante al de obtener la diferencia en longitud del vértice, está también resuelta por las tablas.

Sabemos que en este caso

$$\cos H = -\ \text{tanj}\ \varphi\ \text{tanj}\ \delta$$

o bien:

$$-\text{cotanj}\,(90^\circ - \varphi) = \cos H \,\text{cotanj}\,\delta$$

o también:

$$-\text{cotanj}\,(90^\circ - \varphi) = \cos Y_1 \,\text{cotanj}\,x_1$$

El valor deducido de las tablas será el ángulo al polo de un astro al $\left\{\begin{matrix}\text{ocaso}\\ \text{orto}\end{matrix}\right\}$ verdaderos cuando φ y δ son de $\left\{\begin{matrix}\text{diferente}\\ \text{mismo}\end{matrix}\right\}$ signo.

Ejemplo XI.—Noviembre 23 de 1919. Ángulo al polo del sol en el instante de su orto verdadero.

$$\varphi = 26^\circ\ 30'$$
$$\delta = 20^\circ\ 20'$$

$$x_1 = -\ 20^\circ\ 20'$$
$$90^\circ - \varphi = \quad 63^\circ\ 30'$$

Para $x_1 = 20^\circ$ y para el valor más próximo menor a $90^\circ - \varphi$, corriéndose por la línea horizontal, encontramos en la columna vertical encabezada por $Y^1 = 79^\circ$ el valor de $62^\circ\ 20'.1$, diferencia tabular $= 74'.1$.

La tabla de partes proporcionales para $74'.1$ y $20'$ da $+\ 24'.7$

$$\begin{array}{r} 62^\circ\ 20'.1 \\ +\ 24'.7 \\ \hline 62^\circ\ 44'.8 \end{array} \quad \text{para} \left\{\begin{matrix} Y_1 = 79^\circ\ 00' \\ x_1 = 20^\circ\ 30' \end{matrix}\right.$$

Para $x_1 = 20^\circ$ y para el valor más próximo mayor a $90^\circ - \varphi$, encontramos en la misma forma $64^\circ\ 29'.7$, diferencia tabular$=69'.9$ y en la columa vertical cuyo encabezamiento $Y_1 = 80^\circ$.

La tabla de partes proporcionales con $69'.9$ y $20'$ dá $+\ 23'.3$

$$\begin{array}{r} 64^\circ\ 29'.7 \\ +\ 23'.3 \\ \hline 64^\circ\ 53'.0 \end{array} \quad \text{para} \left\{\begin{matrix} Y_1 = 80^\circ\ 00' \\ x_1 = 20^\circ\ 30' \end{matrix}\right.$$

Por otra parte tenemos:

$$\begin{array}{r} 64^\circ\ 53'.0 \\ 62^\circ\ 44',8 \\ \hline \text{Dif.}^a = +\ 2^\circ\ 08'.2 \text{ en } 60' \end{array}$$

o sea que $1' = \dfrac{60'}{128.2} = 0'.47$

Luego:

$$\begin{array}{r} 63^\circ \quad 30' \\ 62^\circ \quad 44'.8 \\ \hline \text{Dif.}^a = +\ 45'.2 \end{array}$$

De modo que

$$45'.2 \times 0'.47 = +\ 21'.2$$

Entonces:

$$\begin{array}{r} 79^\circ\ 00' \\ +\ 21'.2 \\ \hline Y_1 = 79^\circ\ 21'.2 = 5^h\ 17^m.4 \end{array}$$

Por logaritmos.

$$\begin{array}{ll} \varphi = -\ 26^\circ\ 30' & \log \tan j = \bar{1},697736 \\ \delta = -\ 20^\circ\ 20' & \log \tan j = \bar{1},568873 \\ \hline & \log \cos H = \bar{1},266609 \\ & H = 5^h\ 17^m.25^s \end{array}$$

Ejemplo XII.—Ángulo al polo de la luna en el ocaso verdadero.

$$\varphi = -\ 47^\circ\ 23'$$
$$\delta = +\ 14^\circ\ 18'$$

$$x_1 = +\ 14^\circ\ 18'$$
$$90^\circ - \varphi = 42^\circ\ 32'$$

$$\left.\begin{array}{r} x_1 = 14^\circ \\ 90^\circ - \varphi = 42^\circ\ 32' \end{array}\right\} \text{para } Y_1 = 74^\circ \text{ la tabla dá } 42^\circ\ 07'.8, \text{ dif.}^a \text{ tab.} = 123'.6$$

$$\left.\begin{array}{r} 123'.6 \\ 18'.0 \end{array}\right\} \text{la tabla de partes proporcionales dá } +\ 37'.0$$

$$\begin{array}{r} 42^\circ\ 07'.8 \\ +\ 37'.0 \\ \hline 42^\circ\ 44'.8 \end{array} \quad \text{para} \begin{cases} Y_1 = 74^\circ\ 00' \\ x_1 = 14^\circ\ 18' \end{cases}$$

$$\left.\begin{array}{r} x_1 = 14^\circ \\ 90^\circ - \varphi = 42^\circ\ 32' \end{array}\right\} \text{para } Y_1 = 73^\circ \text{ la tabla dá } 40^\circ\ 27'.4, \text{ dif.}^{\text{a}} \text{ tab} = 122'.8$$

$$\left.\begin{array}{r} 122'.8 \\ 18'.0 \end{array}\right\} \text{la tabla de partes proporcionales dá } +\ 36'.8$$

$$\begin{array}{r} 40^\circ\ 27'.4 \\ +\ 36'.8 \\ \hline 41^\circ\ 04'.2 \end{array} \quad \text{para} \begin{cases} Y_1 = 73^\circ\ 00' \\ x_1 = 14^\circ\ 18' \end{cases}$$

Además:

$$\begin{array}{r} 42^\circ\ 44'.8 \\ 41^\circ\ 04'.2 \\ \hline \end{array}$$

$$\text{Dif.}^{\text{a}} = +\ 1^\circ\ 39'.6 \text{ en } 60'$$

$$\text{o bien en } 1' = \frac{60'}{99.6} = 0'.6$$

Y como:

$$\begin{array}{r} 42^\circ\ 44'.8 \\ 42^\circ\ 37'.0 \\ \hline -\ 7'.8 \end{array}$$

Entonces:

$$-\ 7.'8 \times 0'.6 = -\ 4'.7$$

Finalmente

$$\begin{array}{rr} 74^\circ & 00' \\ & -\ 4'.7 \\ \hline Y_1 = 73^\circ & 55'.3 = 4^{\text{h}}\ 55^{\text{m}}.7 \end{array}$$

El mismo problema resuelto por logaritmos.

$$\begin{array}{ll} \varphi = -\ 47^\circ\ 23' & \log \tan j = 0{,}036172 \\ \delta = +\ 14^\circ\ 18' & \log \tan j = 1{,}406364 \\ \hline & \log \cos H = \overline{1}{,}442536 \\ & H = 4^{\text{h}}\ 55^{\text{m}}\ 40^{\text{s}} \end{array}$$

NOTA.—Como en problemas de esta naturaleza, el movimiento del orto u ocaso de un astro se le requiere con uno o dos minutos de aproximación, el uso de las tablas se simplifica considerablemente entrando con x_1 redondeado al grado más próximo, y tomar de la tabla el Y_1 correspondiente al valor más cercano a $90° - \varphi$, interpolando a ojo cuando fuere necesario.

Así, en el Ejemplo XI tendríamos $Y_1 = 79°.5 = 5^h\,18^m$ y en el Ejemplo XII, $Y_1 = 74° = 4^h\,16^m$.

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TABLA DE PARTES PROPORCIONALES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
2	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8
3	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.8	0.8	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.2	1.2
4	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.3	1.3	1.4	1.5	1.5	1.6	1.7
5	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.4	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.1
6	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5
7	0.1	0.2	0.3	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.0	2.1	2.2	2.3	2.4	2.6	2.7	2.8	2.9
8	0.1	0.3	0.4	0.5	0.7	0.8	0.9	1.0	1.2	1.3	1.5	1.6	1.7	1.8	1.9	2.1	2.2	2.4	2.6	2.7	2.8	2.9	3.1	3.2	3.3
9	0.1	0.3	0.4	0.6	0.7	0.9	1.1	1.2	1.4	1.5	1.7	1.8	1.9	2.1	2.1	2.3	2.5	2.7	2.9	3.0	3.1	3.3	3.5	3.6	3.7
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
10	0.2	0.3	0.5	0.6	0.8	1.0	1.2	1.3	1.5	1.7	1.9	2.0	2.2	2.3	2.5	2.6	2.8	3.0	3.2	3.3	3.5	3.7	3.8	4.0	4.2
11	0.2	0.4	0.5	0.7	0.9	1.1	1.3	1.4	1.6	1.8	2.0	2.2	2.4	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.8	4.0	4.2	4.4	4.6
12	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.1	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0
13	0.2	0.4	0.6	0.9	1.1	1.3	1.5	1.7	1.9	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.9	4.1	4.3	4.5	4.8	5.0	5.2	5.4
14	0.2	0.5	0.7	0.9	1.2	1.4	1.6	1.8	2.1	2.3	2.5	2.8	3.0	3.2	3.4	3.6	3.9	4.2	4.4	4.7	4.9	5.1	5.4	5.6	5.8
15	0.2	0.5	0.7	1.0	1.3	1.5	1.7	2.0	2.3	2.5	2.7	3.0	3.2	3.5	3.7	3.9	4.2	4.5	4.7	5.0	5.2	5.5	5.8	6.0	6.2
16	0.3	0.5	0.8	1.1	1.3	1.6	1.8	2.1	2.4	2.7	2.9	3.2	3.4	3.7	3.9	4.2	4.5	4.8	5.1	5.3	5.6	5.9	6.1	6.4	6.6
17	0.3	0.6	0.8	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.1	3.4	3.7	3.9	4.2	4.4	4.8	5.1	5.4	5.7	6.0	6.2	6.5	6.8	7.1
18	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.3	2.7	3.0	3.3	3.6	3.9	4.1	4.4	4.6	5.0	5.4	5.7	6.0	6.3	6.6	6.9	7.2	7.5
19	0.3	0.6	0.9	1.3	1.6	1.9	2.2	2.5	2.8	3.2	3.5	3.8	4.1	4.4	4.7	4.9	5.3	5.7	6.0	6.3	6.6	7.0	7.3	7.6	7.8
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
20	0.3	0.7	1.0	1.3	1.6	2.0	2.3	2.6	2.9	3.3	3.6	4.0	4.3	4.6	4.9	5.2	5.6	6.0	6.3	6.7	7.0	7.3	7.7	8.0	8.3
21	0.3	0.7	1.1	1.4	1.8	2.1	2.4	2.7	3.1	3.5	3.8	4.2	4.5	4.8	5.1	5.5	5.9	6.3	6.6	7.0	7.3	7.7	8.1	8.4	8.7
22	0.4	0.7	1.1	1.5	1.9	2.2	2.5	2.9	3.3	3.7	4.0	4.4	4.7	5.1	5.4	5.7	6.2	6.6	6.9	7.3	7.7	8.1	8.5	8.8	9.2
23	0.4	0.8	1.1	1.5	1.9	2.3	2.7	3.0	3.4	3.8	4.2	4.6	4.9	5.3	5.6	6.0	6.4	6.9	7.3	7.7	8.1	8.4	8.8	9.2	9.6
24	0.4	0.8	1.2	1.6	2.0	2.4	2.8	3.1	3.5	4.0	4.4	4.8	5.2	5.5	5.9	6.2	6.7	7.2	7.6	8.0	8.4	8.8	9.2	9.6	10.0
25	0.4	0.8	1.2	1.7	2.1	2.5	2.9	3.3	3.7	4.2	4.6	5.0	5.4	5.8	6.1	6.5	7.0	7.5	7.9	8.3	8.7	9.2	9.6	10.0	10.4
26	0.4	0.9	1.3	1.7	2.2	2.6	3.0	3.4	3.9	4.3	4.8	5.2	5.6	6.0	6.4	6.8	7.3	7.8	8.2	8.7	9.1	9.5	10.0	10.4	10.8
27	0.4	0.9	1.4	1.8	2.3	2.7	3.1	3.5	4.0	4.5	5.0	5.4	5.8	6.2	6.6	7.0	7.6	8.1	8.5	9.0	9.5	9.9	10.4	10.8	11.2
28	0.5	0.9	1.4	1.8	2.3	2.8	3.2	3.6	4.2	4.7	5.1	5.6	6.0	6.4	6.9	7.3	7.8	8.4	8.8	9.3	9.8	10.3	10.7	11.2	11.5
29	0.5	1.0	1.5	1.9	2.4	2.9	3.3	3.8	4.3	4.8	5.3	5.8	6.2	6.7	7.1	7.5	8.1	8.7	9.2	9.7	10.2	10.6	11.1	11.6	12.0
30	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5

	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8
2	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.7
4	1.3	1.3	1.4	1.5	1.5	1.5	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5
4	1.7	1.8	1.9	2.0	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.7	2.7	2.8	2.9	2.9	3.0	3.1	3.1	3.2	3.3	3.3
5	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.8	2.9	3.0	3.1	3.2	3.2	3.3	3.4	3.5	3.6	3.7	3.7	3.8	3.9	4.0	4.1	4.2
6	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
7	3.0	3.2	3.3	3.4	3.5	3.6	3.7	3.9	4.0	4.1	4.2	4.3	4.4	4.6	4.7	4.8	4.9	5.0	5.1	5.3	5.4	5.5	5.6	5.7	5.8
8	3.5	3.6	3.7	3.8	4.0	4.2	4.3	4.4	4.5	4.7	4.8	5.0	5.1	5.2	5.3	5.5	5.6	5.7	5.9	6.0	6.1	6.3	6.4	6.6	6.7
9	3.9	4.1	4.2	4.3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.5	5.7	5.8	6.0	6.2	6.3	6.4	6.6	6.7	6.9	7.1	7.2	7.3	7.5
	26	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
10	4.3	4.5	4.7	4.8	5.0	5.2	5.3	5.5	5.7	5.8	6.0	6.2	6.3	6.5	6.7	6.8	7.0	7.2	7.3	7.5	7.7	7.8	8.0	8.2	8.3
11	4.8	4.9	5.1	5.3	5.5	5.7	5.9	6.1	6.2	6.4	6.6	6.8	7.0	7.1	7.3	7.5	7.7	7.9	8.1	8.2	8.4	8.6	8.8	9.0	9.2
12	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	9.2	9.4	9.6	9.8	10.0
13	5.6	5.8	6.1	6.3	6.5	6.7	6.9	7.2	7.4	9.7	7.8	8.0	8.2	8.5	8.7	8.9	9.1	9.3	9.5	9.7	10.0	10.2	10.4	10.6	10.8
14	6.1	6.3	6.5	6.8	7.0	7.2	7.5	7.7	7.9	8.2	8.4	8.6	8.9	9.1	9.3	9.6	9.8	10.0	10.3	10.5	10.7	11.0	11.2	11.5	11.7
15	6.5	6.8	7.0	7.3	7.5	7.7	7.9	8.2	8.5	8.8	9.0	9.2	9.5	9.7	10.0	10.3	10.5	10.7	11.0	11.2	11.5	11.8	12.0	12.3	12.5
16	6.9	7.2	7.5	7.7	8.0	8.3	8.5	8.8	9.1	9.3	9.6	9.9	10.1	10.4	10.7	11.0	11.2	11.5	11.7	12.0	12.3	12.5	12.8	13.0	13.3
17	7.4	7.7	7.9	8.2	8.5	8.8	9.1	9.3	9.6	9.9	10.2	10.5	10.8	11.0	11.3	11.6	11.9	12.2	12.5	12.7	13.0	13.3	13.6	13.9	14.2
18	7.8	8.1	8.4	8.7	9.0	9.3	9.6	9.9	10.2	10.5	10.8	11.1	11.4	11.7	12.0	12.3	12.6	12.9	13.2	13.5	13.8	14.1	14.4	14.7	15.0
19	8.2	8.5	8.9	9.2	9.5	9.8	10.1	10.5	10.8	11.1	11.4	11.7	12.0	12.4	12.7	13.0	13.3	13.6	13.9	14.2	14.6	14.9	15.2	15.5	15.8
	26	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
20	8.7	9.0	9.3	9.6	10.0	10.4	10.7	10.9	11.3	11.7	12.0	12.3	12.7	13.0	13.3	13.7	14.0	14.3	14.7	15.0	15.3	15.7	16.0	16.3	16.7
21	9.1	9.4	9.8	10.1	10.5	10.9	11.2	11.6	11.9	12.3	12.6	13.0	13.3	13.6	14.0	14.4	14.7	15.1	15.4	15.8	16.1	16.5	16.8	17.1	17.5
22	9.5	9.9	10.3	10.7	11.0	11.4	11.7	12.1	12.5	12.8	13.2	13.6	13.9	14.3	14.7	15.1	15.4	15.8	16.1	16.5	16.9	17.2	17.6	18.0	18.3
23	10.0	10.3	10.7	11.1	11.5	11.9	12.3	12.6	13.0	13.4	13.8	14.2	14.6	14.9	15.3	15.7	16.1	16.5	16.9	17.3	17.6	18.0	18.4	18.8	19.2
24	10.4	10.8	11.2	11.6	12.0	12.4	12.8	13.2	13.6	14.0	14.4	14.8	15.2	15.6	16.0	16.4	16.8	17.2	17.6	18.0	18.4	18.8	19.2	19.6	20.0
25	10.8	11.3	11.7	12.1	12.5	12.9	13.3	13.8	14.2	14.6	15.0	15.4	15.8	16.3	16.7	17.1	17.5	17.9	18.3	18.8	19.2	19.6	20.0	20.4	20.8
26	11.3	11.7	12.1	12.6	13.0	13.5	13.9	14.3	14.7	15.2	15.6	16.0	16.4	16.9	17.3	17.7	18.2	18.6	19.1	19.5	19.9	20.4	20.8	21.3	21.7
27	11.7	12.1	12.6	13.1	13.5	14.0	14.4	14.9	15.3	15.8	16.2	16.7	17.2	17.6	18.0	18.5	18.9	19.3	19.8	20.3	20.7	21.2	21.6	22.1	22.5
28	12.1	12.6	13.1	13.5	14.0	14.4	14.8	15.3	15.9	16.3	16.8	17.3	17.7	18.2	18.7	19.2	19.6	20.1	20.5	21.0	21.5	21.9	22.4	22.9	23.3
29	12.6	13.1	13.5	14.0	14.5	14.9	15.4	15.9	16.4	16.9	17.4	17.9	18.3	18.8	19.3	19.8	20.3	20.8	21.2	21.7	22.2	22.7	23.2	23.7	24.2
30	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0

	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	0.8	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2
3	1.7	1.7	1.7	1.8	1.8	1.9	1.9	1.9	1.9	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.5
3	2.6	2.6	2.7	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.1	3.2	3.3	3.3	3.3	3.4	3.5	3.5	3.6	3.6	3.6	3.7	3.7
4	3.4	3.5	3.5	3.6	3.7	3.7	3.8	3.9	3.9	4.0	4.1	4.1	4.2	4.3	4.3	4.4	4.5	4.5	4.6	4.7	4.7	4.8	4.9	4.9	4.9
5	4.3	4.3	4.4	4.5	4.6	4.7	4.7	4.8	4.9	5.0	5.1	5.2	5.2	5.3	5.4	5.5	5.5	5.7	5.7	5.8	5.9	6.0	6.1	6.2	6.2
6	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5
7	5.9	6.1	6.2	6.3	6.4	6.5	6.6	6.8	6.9	7.0	7.1	7.2	7.3	7.5	7.6	7.7	7.8	7.9	8.0	8.2	8.3	8.4	8.5	8.6	8.7
8	6.8	6.9	7.1	7.2	7.4	7.5	7.6	7.7	7.9	8.0	8.2	8.3	8.4	8.5	8.7	8.8	8.9	9.1	9.2	9.3	9.5	9.6	9.7	9.9	10.0
9	7.7	7.8	8.0	8.1	8.2	8.4	8.6	8.7	8.9	9.0	9.1	9.3	9.5	9.6	9.8	9.9	10.0	10.2	10.4	10.5	10.7	10.8	10.9	10.1	11.2
	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
10	8.5	8.7	8.8	9.0	9.2	9.3	9.5	9.7	9.8	10.0	10.2	10.3	10.5	10.7	10.8	11.0	11.2	11.3	11.5	11.7	11.9	12.0	12.2	12.3	12.5
11	9.4	9.5	9.7	9.9	10.1	10.3	10.4	10.6	10.8	11.0	11.2	11.4	11.6	11.7	11.9	12.1	12.3	12.5	11.7	12.8	13.0	13.2	13.4	13.6	13.8
12	10.2	10.4	10.6	10.8	11.0	11.2	11.4	11.6	11.8	12.0	12.2	12.4	12.6	12.8	13.0	13.2	13.4	13.6	13.8	14.0	12.2	14.4	14.6	14.8	15.0
13	11.0	11.3	11.5	11.7	11.9	12.1	12.3	12.6	12.8	13.0	13.2	13.4	13.6	13.9	14.1	14.3	13.5	14.7	14.9	15.2	15.4	15.6	15.8	16.0	16.2
14	11.9	12.1	12.4	12.6	13.0	13.1	13.3	13.5	13.8	14.0	14.2	14.5	14.7	14.9	15.2	15.4	15.6	15.9	16.1	16.3	16.6	16.8	17.0	17.3	17.5
15	12.8	13.0	13.3	13.5	13.7	14.0	14.2	14.5	14.8	15.0	15.2	15.5	15.7	16.0	16.3	16.5	16.7	17.0	17.3	17.5	17.7	18.0	18.2	18.5	18.7
16	13.6	13.9	14.1	14.4	14.7	14.9	15.2	15.5	15.8	16.0	16.2	16.5	16.8	17.1	17.4	17.6	17.9	18.1	18.4	18.7	18.9	19.2	19.5	19.7	20.0
17	14.4	14.7	15.0	15.3	15.6	15.9	16.1	16.4	16.7	17.0	17.3	17.6	17.9	18.1	18.4	18.7	19.0	19.3	19.6	19.8	20.1	20.4	20.7	21.0	21.2
18	15.3	15.6	15.9	16.2	16.5	16.8	17.1	17.4	17.7	18.0	18.3	18.6	18.9	19.2	19.5	19.8	20.1	20.4	20.7	21.0	21.3	21.5	21.9	22.2	22.5
19	16.1	16.5	16.8	17.1	17.4	17.7	18.1	18.4	18.7	19.0	19.3	19.6	19.9	20.3	20.6	20.9	21.2	21.5	21.9	22.2	22.5	22.8	23.1	23.4	23.7
	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
20	17.0	17.3	17.7	18.0	18.3	18.7	19.0	19.3	19.7	20.0	20.4	20.7	21.0	21.3	21.7	22.0	22.4	22.7	23.0	23.3	23.6	24.0	24.3	24.7	25.0
21	17.8	18.2	18.6	18.9	19.3	19.6	19.9	20.3	20.7	21.0	21.4	21.7	22.1	22.4	22.8	23.1	23.4	23.8	24.1	24.5	24.8	25.2	25.5	25.9	26.2
22	18.7	19.1	19.4	19.8	20.2	20.5	20.9	21.3	21.7	22.0	22.4	22.7	23.1	23.5	23.8	24.2	24.6	24.9	25.3	25.7	26.1	26.4	26.7	27.1	27.5
23	19.6	19.9	20.3	20.7	21.1	21.5	21.8	22.2	22.6	23.0	23.4	23.8	24.1	24.5	24.9	25.3	25.7	26.1	26.5	26.8	27.2	27.6	28.0	28.4	28.7
24	20.4	20.8	21.2	21.6	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	26.0	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	30.0
25	21.2	21.7	22.1	22.5	22.9	23.3	23.7	24.2	24.6	25.0	25.4	25.8	26.3	26.8	27.1	27.5	27.9	28.3	28.8	29.2	29.7	30.0	30.4	30.8	31.3
26	22.1	22.5	23.0	23.4	23.8	24.3	24.7	25.1	25.6	26.0	26.4	26.9	27.3	27.8	28.2	28.6	29.0	29.5	29.9	30.3	30.8	31.2	31.6	32.1	32.5
27	23.0	23.4	23.9	24.3	24.7	25.2	25.6	26.1	26.6	27.0	27.5	27.9	28.4	28.9	29.3	29.7	30.1	30.6	31.1	31.5	32.0	32.4	32.8	33.3	33.7
28	23.8	24.3	24.7	25.2	25.6	26.1	26.6	27.1	27.5	28.0	28.5	28.9	29.4	30.0	30.4	30.8	31.3	31.7	32.2	32.7	33.2	33.6	34.1	34.5	35.0
29	24.7	25.1	25.6	26.1	26.6	27.1	27.6	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5	31.9	32.4	32.9	33.4	33.8	34.3	34.8	35.3	35.8	36.2
30	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5

	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.7	1.7
2	2.5	2.6	2.6	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.9	2.9	2.9	3.0	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3.2	3.3	3.3	3.3
3	3.8	3.9	3.9	3.9	4.0	4.1	4.1	4.2	4.2	4.2	4.3	4.3	4.4	4.4	4.5	4.5	4.6	4.6	4.7	4.8	4.8	4.8	4.9	4.9	5.0
4	5.1	5.1	5.2	5.2	5.3	5.4	5.5	5.5	5.6	5.7	5.7	5.8	5.9	5.9	6.0	6.1	6.1	6.2	6.3	6.3	6.4	6.5	6.5	6.6	6.7
5	6.3	6.4	6.5	6.6	6.7	6.8	6.8	6.9	7.0	7.1	7.2	7.2	7.3	7.4	7.5	7.6	7.7	7.7	7.8	7.9	8.0	8.1	8.2	8.2	8.3
6	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0
7	8.9	9.0	9.1	9.2	9.3	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.3	10.4	10.5	10.6	10.7	10.9	11.0	11.1	11.2	11.3	11.4	11.6	11.7
8	10.1	10.3	10.4	10.6	10.7	10.8	10.9	11.0	11.2	11.3	11.5	11.6	11.7	11.9	12.0	12.2	12.3	12.4	12.5	12.7	12.8	12.9	13.1	13.2	13.3
9	11.4	11.6	11.7	11.8	12.0	12.2	12.3	12.5	12.6	12.7	12.9	13.1	13.2	13.4	13.5	13.7	13.8	13.9	14.1	14.3	14.4	14.5	14.7	14.8	15.0
	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
10	12.7	12.8	13.0	13.2	13.3	13.5	13.7	13.8	14.0	14.2	14.3	14.5	14.7	14.8	15.0	15.2	15.3	15.5	15.7	15.8	16.0	16.2	16.3	16.5	16.7
11	13.9	14.2	14.3	13.5	14.7	14.9	15.0	15.2	15.4	15.6	15.8	15.9	16.1	16.3	16.5	15.7	16.9	17.0	17.2	17.4	17.6	17.8	18.0	18.2	18.3
12	15.2	15.4	15.6	15.8	16.0	16.2	16.4	16.6	16.8	17.0	17.2	17.4	17.6	17.8	18.0	18.2	18.4	18.6	18.8	19.0	19.2	19.4	19.6	19.8	20.0
13	16.5	16.7	16.9	17.1	17.3	17.5	17.8	18.0	18.2	18.4	18.6	18.9	19.1	19.3	19.5	19.7	19.9	20.2	20.4	20.6	20.8	21.0	21.2	21.5	21.7
14	17.7	17.9	18.2	18.5	18.7	18.9	19.1	19.4	19.6	19.8	20.1	20.3	20.5	20.8	21.0	21.2	21.5	21.7	21.9	22.2	22.4	22.6	22.9	23.1	23.3
15	19.0	19.3	19.5	19.8	20.0	20.3	20.5	20.8	21.0	21.2	21.5	21.7	22.0	22.3	22.5	22.8	23.0	23.2	23.5	23.8	24.0	24.2	24.5	24.7	25.0
16	20.3	20.5	20.8	21.1	21.3	21.6	21.9	22.1	22.4	22.7	22.9	23.2	23.5	23.7	24.0	24.3	24.5	24.8	25.1	25.4	25.6	25.9	26.1	26.4	26.7
17	21.5	21.8	22.1	22.4	22.7	23.0	23.2	23.5	23.8	24.1	24.4	24.6	24.9	25.2	25.5	25.8	26.1	26.3	26.6	26.9	27.2	27.5	27.8	28.0	28.3
18	22.8	23.1	23.4	23.7	24.0	24.3	24.6	24.9	25.2	25.5	25.8	26.1	26.4	26.7	27.0	27.3	27.6	27.9	28.2	28.5	28.8	29.1	29.4	29.7	30.0
19	24.1	24.4	24.7	25.0	25.3	25.6	26.0	26.3	26.6	26.9	27.2	27.6	27.9	28.2	28.5	28.8	29.1	29.5	29.8	30.1	30.4	30.7	31.0	31.4	31.7
	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
20	25.3	25.7	26.0	26.4	26.7	27.0	27.3	27.7	28.0	28.3	28.7	29.0	29.3	29.7	30.0	30.3	30.7	31.0	31.3	31.7	32.0	32.3	32.7	33.0	33.3
21	26.6	27.0	27.3	27.7	28.0	28.4	28.7	29.1	29.4	29.7	30.1	30.4	30.8	31.2	31.5	31.8	32.2	32.5	32.9	33.3	33.6	33.9	34.3	34.6	35.0
22	27.9	28.2	28.6	28.9	29.3	29.7	30.1	30.4	30.8	31.2	31.5	31.9	32.3	32.6	33.0	33.4	33.7	34.1	34.5	34.8	35.2	35.6	35.9	36.3	36.7
23	29.1	29.5	29.9	30.3	30.7	31.1	31.4	31.8	32.2	32.6	33.0	33.3	33.7	34.1	34.5	34.9	35.3	35.6	36.0	36.4	36.8	37.2	37.6	37.9	38.3
24	30.4	30.8	31.2	31.6	32.0	32.4	32.8	33.2	33.6	34.0	34.4	34.8	35.2	35.6	36.0	36.4	36.8	37.2	37.6	38.0	38.4	38.8	39.2	39.5	40.0
25	31.7	32.1	32.5	32.9	33.3	33.7	34.2	34.6	35.0	35.4	35.8	36.3	36.7	37.1	37.5	37.9	38.3	39.8	39.2	39.6	40.0	40.4	40.8	41.3	41.7
26	32.9	33.4	33.8	34.3	34.7	35.1	35.5	36.0	36.4	36.8	37.3	37.7	38.1	38.6	39.0	39.4	39.9	40.3	40.7	41.2	41.6	42.0	42.5	42.9	43.3
27	34.2	34.7	35.1	35.6	36.0	36.4	36.9	37.2	37.8	38.2	38.7	39.1	39.6	40.0	40.5	40.9	41.4	41.8	42.3	42.8	43.2	43.6	44.1	44.5	45.0
28	35.5	35.9	36.4	36.9	37.3	37.8	38.3	38.7	39.2	39.7	40.1	40.6	41.1	41.5	42.0	42.5	42.9	43.4	43.9	44.3	44.8	45.3	45.7	46.2	46.7
29	36.7	37.2	37.7	38.2	38.7	39.2	39.6	40.1	40.6	41.1	41.6	42.0	42.5	43.0	43.5	44.0	44.5	45.0	45.4	45.9	46.4	46.9	47.4	47.8	48.3
30	38.0	38.5	39.0	39.5	40.0	40.5	41.0	41.5	42.0	42.5	43.0	43.5	44.0	44.5	45.0	45.5	46.0	46.5	47.0	47.5	48.0	48.5	49.0	49.5	50.0

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
30	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5
31	0.5	1.0	1.6	2.1	2.6	3.1	3.6	4.1	4.7	5.2	5.7	6.2	6.7	7.2	7.7	8.3	8.8	9.3	9.8	10.3	10.8	11.4	11.9	12.4	12.9
32	0.5	1.1	1.6	2.1	2.7	3.2	3.7	4.3	4.8	5.3	5.9	6.4	6.9	7.5	8.0	8.5	9.1	9.6	10.2	10.7	11.2	11.7	12.2	12.8	13.3
33	0.5	1.1	1.7	2.2	2.7	3.3	3.8	4.4	4.9	5.5	6.1	6.6	7.2	7.7	8.3	8.8	9.4	9.9	10.5	11.0	11.6	12.1	12.7	13.2	13.7
34	0.6	1.1	1.7	2.3	2.8	3.4	4.0	4.5	4.1	5.7	6.3	6.8	7.4	7.9	8.5	9.1	9.6	10.2	10.7	11.3	11.9	12.5	13.1	13.6	14.2
35	0.6	1.2	1.8	2.3	2.9	3.5	4.1	4.7	5.2	5.8	6.4	7.0	7.6	8.2	8.7	9.3	9.9	10.5	11.1	11.7	12.3	12.8	13.4	14.0	14.6
36	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2	7.8	8.4	9.0	9.6	10.2	10.8	11.3	12.0	12.6	13.2	13.8	14.4	15.0
37	0.6	1.2	1.8	2.5	3.1	3.7	4.3	4.9	5.6	6.2	6.8	7.4	8.0	8.6	9.3	9.9	10.5	11.1	11.7	12.3	12.9	13.6	14.2	14.8	15.4
38	0.6	1.3	1.9	2.5	3.2	3.8	4.4	5.1	5.7	6.3	7.0	7.6	8.2	8.9	9.5	10.1	10.8	11.4	12.1	12.7	13.3	13.9	14.6	15.2	15.9
39	0.6	1.3	2.0	2.6	3.3	3.9	4.5	5.2	5.9	6.5	7.2	7.8	8.4	9.1	9.7	10.4	11.1	11.7	12.4	13.0	13.7	14.3	15.0	15.6	16.3
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**
40	0.7	1.3	2.0	2.7	3.3	4.0	4.7	5.3	6.0	6.7	7.4	8.0	8.7	9.3	10.0	10.7	11.3	12.0	12.6	13.3	14.0	14.7	15.4	16.0	16.7
41	0.7	1.4	2.0	2.7	3.4	4.1	4.8	5.5	6.1	6.8	7.5	8.2	8.9	9.6	10.2	10.9	11.6	12.3	13.0	13.7	14.4	15.0	15.7	16.4	17.1
42	0.7	1.4	2.1	2.8	3.5	4.2	4.9	5.6	6.3	7.0	7.7	8.4	9.1	9.8	10.5	11.2	11.9	12.6	13.3	14.0	14.7	15.4	16.1	16.8	17.5
43	0.7	1.4	2.1	2.9	3.6	4.3	5.0	5.7	6.5	7.2	7.9	8.6	9.3	10.0	10.7	11.5	12.2	12.9	13.6	14.3	15.0	15.8	16.5	17.2	17.9
44	0.8	1.5	2.2	2.9	3.6	4.4	5.1	5.9	6.6	7.3	8.1	8.8	9.5	10.3	11.0	11.7	12.5	13.2	13.9	14.7	15.4	16.1	16.9	17.6	18.4
45	0.8	1.5	2.2	3.0	3.7	4.5	5.2	6.0	6.7	7.5	8.3	9.0	9.7	10.5	11.2	12.0	12.8	13.5	14.2	15.0	15.8	16.5	17.3	18.0	18.7
46	0.8	1.5	2.3	3.1	3.8	4.6	5.4	6.1	6.9	7.7	8.5	9.2	10.0	10.7	11.5	12.3	13.0	13.8	14.6	15.3	16.1	16.9	17.6	18.4	19.2
47	0.8	1.6	2.3	3.1	3.9	4.7	5.5	6.3	7.0	7.8	8.6	9.4	10.2	11.0	11.7	12.5	13.3	14.1	14.9	15.7	16.5	17.2	18.0	18.8	19.6
48	0.8	1.6	2.4	3.2	4.0	4.8	5.6	6.4	7.2	8.0	8.8	9.6	10.4	11.2	12.0	12.8	13.6	14.4	15.2	16.0	16.8	17.6	18.4	19.2	20.0
49	0.8	1.6	2.5	3.3	4.1	4.9	5.7	6.5	7.3	8.2	9.0	9.8	10.6	11.4	12.3	13.1	13.9	14.7	15.5	16.3	17.1	18.0	18.8	19.6	20.4
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**
50	0.8	1.7	2.5	3.3	4.2	5.0	5.8	6.7	7.5	8.3	9.2	10.0	10.8	11.7	12.5	13.4	14.2	15.0	15.8	16.7	17.5	18.4	19.2	20.0	20.8
51	0.8	1.7	2.5	3.4	4.3	5.1	5.9	6.8	7.7	8.5	9.3	10.2	11.0	11.9	12.8	13.6	14.5	15.3	16.2	17.0	17.8	18.7	19.6	20.4	21.2
52	0.9	1.7	2.6	3.5	4.3	5.2	6.1	6.9	7.8	8.7	9.6	10.4	11.3	12.1	13.0	13.9	14.7	15.6	16.5	17.3	18.2	19.1	19.9	20.8	21.6
53	0.9	1.8	2.7	3.5	4.4	5.3	6.2	7.0	7.9	8.8	9.7	10.6	11.5	12.3	13.3	14.2	15.0	15.9	16.8	17.7	18.6	19.5	20.3	21.2	22.1
54	0.9	1.8	2.7	3.6	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8	11.7	12.6	13.5	14.4	15.3	16.2	17.1	18.0	18.9	19.8	20.7	21.6	22.5
55	0.9	1.8	2.7	3.7	4.6	5.5	6.4	7.3	8.2	9.2	10.1	11.0	11.9	12.8	13.7	14.7	15.6	16.5	17.4	18.3	19.2	20.2	21.1	22.0	22.9
56	0.9	1.9	2.8	3.7	4.7	5.6	6.5	7.4	8.4	9.3	10.3	11.2	12.1	13.0	14.0	15.0	15.9	16.8	17.8	18.7	19.6	20.6	21.5	22.4	23.3
57	0.9	1.9	2.9	3.8	4.8	5.7	6.6	7.6	8.6	9.5	10.5	11.4	12.3	13.3	14.3	15.2	16.2	17.1	18.1	19.0	20.0	20.9	21.9	22.8	23.7
58	1.0	1.9	2.9	3.9	4.8	5.8	6.8	7.7	8.7	9.7	10.7	11.6	12.6	13.5	14.5	15.5	16.4	17.4	18.3	19.3	20.3	21.3	22.2	23.2	24.1
59	1.0	2.0	3.0	3.9	4.9	5.9	6.9	7.8	8.8	9.8	10.8	11.8	12.8	13.7	14.7	15.2	16.7	17.7	18.7	19.7	20.7	21.7	22.6	23.6	24.5
60	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0

	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
30	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.0	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0
31	13.4	13.9	14.5	15 0	15.5	16.0	16.5	17.5	17.6	18.1	18.6	19.1	19.6	20.2	20.7	21.2	21.7	22.2	22.7	23.2	23.8	24.3	24.8	25.3	25.8
32	13.9	14.4	14.9	15.5	16.0	16.6	17.1	17.6	18.1	18.7	19.2	19.7	20.3	20.8	21.3	21.8	22.4	22.9	23.5	24.0	24.5	25.1	25.6	26.2	26.7
33	14.3	14.8	15.4	15.9	16.5	17.0	17.6	18.2	18.7	19.3	19.8	20.3	20.9	21.4	22.0	22.6	23.1	23.6	24.2	24.7	25.3	25.9	26.4	27.1	27.5
34	14.7	15.3	15.9	16.4	17.0	17.6	18.1	18.7	19.3	19.8	20.4	21.0	21.5	22.1	22.7	23.3	23.8	24.4	24.9	25.5	26.1	26.6	27.0	27.8	28.3
35	15.2	15.8	16.3	16.9	17.5	18.1	18.7	19.3	19.8	20.4	21.0	21.6	22.2	22.7	23.3	23.9	24.5	25.1	25.7	28.2	26.8	27.4	28.2	28.6	29.2
36	15.6	16.2	16.8	17.4	18.0	18.6	19.2	19.8	20.4	21.0	21.6	22.2	22.8	23.4	24.0	24.6	25.2	25.8	26.4	27.0	27.6	28.2	28.8	29.4	30.0
37	16.0	16.6	17.3	17.9	18.5	19.1	19.7	20.4	21.0	21.6	22.2	22.8	23.4	24.1	24.7	25.3	25.9	26.5	27.1	27.7	28.4	29.0	29.6	30.2	30.8
38	16.5	17.1	17.7	18.4	19.0	19.6	20.3	20.9	21.5	22.2	22.8	23.4	24.1	24.7	25.3	26.0	26.6	27.2	27.9	28.5	29.1	29.8	30.4	31.1	31.7
39	16.9	17.6	18.2	18.9	19.5	20.1	20.8	21.4	22.1	22.8	23.4	24.0	24.7	25.3	26.0	26.7	27.3	28.9	28.6	29.2	29.9	30.6	31.2	31.9	32.5
	26	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
40	17.3	18.0	18.7	19.3	20.0	20.6	21.3	22.0	22.7	23.3	24.0	24.7	25.3	26.0	26.7	27.4	28.0	28.7	29.3	30.0	30.7	31.3	32 0	32.7	33.3
41	17.8	18.4	19.1	19.8	20.5	21.2	21.9	22.6	23.2	23.9	24.6	25.3	26.0	26.6	27.3	28.0	28.7	29.4	30.1	30.8	31.4	32.1	32.8	33.5	34.2
42	18.2	18.9	19.6	20.3	21.0	21.7	22.4	23.1	23.8	24.5	25.2	25.9	26.6	27.3	28.0	28.7	29.4	30.1	30.9	31.5	32.2	32.9	33.6	34.3	35.0
43	18.6	19.3	20.1	20 8	21.5	22.2	22.9	23.6	24.4	25.1	25.8	26.5	27.2	27.9	28.7	29.4	30.1	30.9	31.6	32.3	33.0	33.7	34.4	35.1	35.8
44	19.1	19.8	20.5	21.3	22.0	22.7	23.5	24.2	24.9	25.7	26.4	27.1	27.9	28.6	29.3	30.1	30.8	31.6	32.4	33.1	33.7	34.5	35.2	36.0	36.7
45	19.5	20.2	21.0	21.8	22.5	23.2	24.0	24.7	25.5	26.3	27.0	27.7	28.5	29.3	30.0	30.8	31.5	32.3	33.1	33.8	34.5	35.3	36.0	36.8	37.5
46	19.9	20.7	21.5	22.2	23.0	23 8	24.5	25.3	26.1	26.8	27.6	28.4	29.1	29.9	30.7	31.5	32.2	33.0	33.8	34.5	35.3	36.0	36.8	37.6	38.3
47	20.4	21.1	21.9	22.7	23.5	24.3	25.1	25.9	26.6	27.4	28 2	29.0	29.8	30.5	31.3	32.1	32.9	33.7	34.6	35.3	36.0	36.8	37.6	38.4	39.2
48	20.8	21.5	22.3	23.1	24.0	24.8	25.6	26.4	27.2	28.0	28.8	29.6	30.4	31.2	32.0	32.8	33.6	34.2	35.3	36.1	36.8	37.6	38.4	39.2	40.8
49	21.2	22.1	22.9	23.7	24.5	25.3	26.1	26.9	27.8	28.6	29.4	30.2	31.0	31.9	32.7	33.5	34.3	35.4	36.0	36.8	37.6	38.4	39.2	40.0	40.0
	26	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
50	21.7	22.5	23.4	24.2	25.0	25.8	26.7	27.6	38.4	29.2	30.0	30 8	31 7	32.5	33.3	34.2	35.0	35.9	36.8	37.6	38.4	39.2	40.0	40.9	41.7
51	22.1	22.9	23.8	24.7	25.5	26.3	27.2	28.0	28.9	29.8	30.6	31.4	32.3	33.1	34.0	34.9	35.7	36.6	37.5	38.3	39.1	40.0	40.8	41.6	42.5
52	22.5	23.4	24.3	25.1	26.0	26.9	27.7	28.6	29.5	30.3	31.2	32.0	32.9	33.8	34.7	35.6	36.4	37.3	38.2	39.0	39.9	40.7	41.6	42.5	43.3
53	22.4	23.8	24.8	25.6	26.5	27.4	28.2	29.2	30.1	30.9	31.8	32.6	33.5	34.4	35.3	36.2	37.1	38.0	38.9	39.8	40.7	41.5	42.4	43.3	44.2
54	23.9	24.3	25.2	26.0	27.0	27.9	28.8	29.7	30.6	31.4	32.2	33.2	34.2	35.1	36.0	36.9	37.8	38.7	39.7	40.5	41.4	42.3	43.2	44.0	45.0
55	23.8	24.7	26.7	27.6	27 5	28.4	29.2	30.2	31.2	32.1	33.0	33.9	34.8	33.8	36.7	37.6	38.5	39.5	40.4	41.3	42.2	43.1	44.0	44.9	45.8
56	24.2	25.2	26.2	27.1	28.0	28.9	29.8	30.8	31.8	32.7	33.6	34.5	35.4	36.4	37.3	38.3	39.2	40.2	41.1	42.0	43.0	43.9	44.8	45.8	46.7
57	24.7	25.5	26.6	27.6	28.5	29.4	30.4	31.3	32.3	33.2	34.2	35.1	36.1	37.0	38.0	39.0	39.9	40.9	41.9	42 8	43.7	44.7	45.6	46.6	47.5
58	25.1	26.1	27.1	28.8	29.0	30.0	30.9	31.9	32.9	33.8	34.8	35.8	36 7	37.7	38.7	39.6	40.6	41.6	42.6	43.5	44.5	45.4	46.4	47.4	48.3
59	25.5	26.5	27.6	28.5	29.5	30.5	31.4	32.0	33.5	32.4	35.4	36.4	37.3	38.3	39.3	40.3	41.3	42.6	43.3	44.3	45.3	46.2	47.2	48.4	49.2
60	26.0	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0	45.0	46.0	47.0	48.0	49.0	50.0

	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
30	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	35.5	35.0	35.5	36.0	36.5	37.0	37.5
31	26.3	26.9	27.4	27.9	28.4	28.9	29.4	30.0	30.5	31.0	31.5	32.0	32.6	33.1	33.6	34.1	34.6	35.1	35.6	36.2	36.7	37.2	37.7	38.2	38.7
33	27.2	27.7	28.2	28.8	29.3	29.9	30.4	30.9	31.5	32.0	32.5	33.1	33.6	34.1	34.6	35.2	35.7	36.3	36.8	37.3	37 8	38.4	38.9	39.5	40.0
33	28.1	28.6	29.2	29.7	30.2	40.8	31.4	31.9	32.5	33.0	33.6	34.1	34.6	35.2	35.6	36.3	36.8	37.4	37.9	38.5	39.0	39.6	40.1	40.7	41.2
34	28.9	29.5	30.0	30.6	31.1	31.7	32.3	32.9	33.5	34.0	34.5	35.1	35.7	36.3	36.8	37.4	37.9	38.5	39.2	39.7	40.2	40.8	41.3	41.9	42.4
35	29.8	30.3	30.9	31.5	32.1	32.7	33.3	33.8	34.4	35.0	35.6	36.2	36.7	37.3	37.9	38.5	39.1	39.7	40.2	40.8	41.3	42.0	42.6	43.2	43.7
36	30.6	31.2	31.8	32.4	33.0	33.6	34.2	34.8	35 4	36.0	36.6	37.2	37.8	38.4	39.0	39.6	40.2	40.8	41.4	42 0	42.6	43.2	43.8	44.4	45.0
37	31.4	32.1	32.7	33.3	33.9	34.5	35.2	35.8	36.4	37.0	37.6	38.2	38.8	39.5	40.1	40.7	41.3	41.9	42.5	43.2	43.8	44.4	45.0	45.6	46.2
38	32.3	32.9	33.6	34.2	34.8	35.5	36.1	36.7	37.4	38.0	38.6	39.3	39.9	40.5	41.1	41.8	42.4	43.1	43.7	44.3	44.9	45.6	46.2	46.8	47.4
39	33.2	33.8	34.4	35.1	35.7	36.4	37.0	37.7	38.4	39.0	39.7	40.3	40.9	41.6	42.2	42.9	43.5	44.2	44.8	45 5	46.1	46.8	47.4	48.1	48.8
	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
40	33.8	34.7	35.3	36.0	36.6	37.3	38.0	38.7	39.4	40.0	40.7	41.3	42.0	42.7	43.3	44.0	44.6	45.3	46.0	46.7	46.3	48.0	48.6	49.3	49.9
41	34.9	35.5	36.2	36.9	37.6	38.3	38.9	39.6	40.3	41.0	41.7	42.4	43.0	43.7	44.4	45.1	45.8	46 5	47.1	47.8	48.5	49.2	49.9	50.6	51.2
42	35.7	36.4	37.1	37.8	38.5	39.2	39.9	40.6	41.3	42.0	42.7	43.4	44.1	44.8	45.5	46.2	46.9	47.6	48.3	49 0	49.7	50.4	51.1	51.8	52.5
43	36.5	37.3	38.0	38.7	39.4	40.1	40.8	41.6	42.3	43.0	43.7	44.4	45.1	45.9	46.6	47.3	48.0	48.7	49.4	50.2	50.9	51.6	52.3	53.0	53.7
44	37.4	38.1	38.9	39.6	40.3	41.1	41.8	42.5	43.2	44.0	44.7	45.4	46.1	46.9	47.6	48.4	49.1	49.8	50.5	41.3	52.0	52.8	53.5	54.3	52.0
45	38.3	39.0	39.7	40.5	41.2	42.0	42.8	43.5	44.2	45.0	45.7	46.5	47.2	48.0	48 7	49.5	50 2	51.0	51.7	52.5	53.2	54.0	54.7	55.5	55.2
46	39.1	39.9	40.6	41.4	42.2	42.9	43.7	44.5	45.2	46.0	46.7	47.5	48 3	49.1	49.8	50.6	51.3	52.1	52.9	53.7	54.4	55.2	55.9	56.7	57.5
47	40.0	40.7	41.5	42.3	43.1	43.9	44.6	45.4	46.2	47.0	47.8	48.6	49.4	50.1	50.9	51.7	52.4	53.2	54.0	54.8	55.6	56 4	57.2	58.0	58.7
48	40.8	41.6	42.4	43.2	44.0	44.8	45.6	46.4	47.2	48.0	48.8	49.6	50.4	51.2	52.0	52.8	53.6	54.4	55.2	56.0	56.8	57.6	58.4	59.2	60.0
49	41.6	42.5	43.3	44.1	44.9	45.7	46.6	47.4	48.2	49.0	49.8	50.6	51.5	52.3	53.1	53.9	54.7	55.5	56.3	57.2	58 0	58.8	59.6	60.4	61.2
	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
50	42.5	43.3	44.2	45.0	45.8	46.7	47.5	48.3	49.1	50.0	50.8	51.7	52.5	53.3	54.1	55.0	55.8	56 7	57.5	58.3	59.1	60.0	60.9	61.8	62.5
51	43.5	44.2	45.1	45.9	46.8	47.6	48.4	49.3	50.1	51.0	51.8	52.7	53.5	54.4	55.2	56.1	56.9	57.8	58.6	59.5	60.3	61.2	62.1	63.0	63.8
52	44.2	45.1	46.0	46.8	47.7	48.5	49.4	50.3	51.1	52.0	52.8	53.7	54.6	55.5	56 3	57 2	58.0	58.9	59.8	60.7	61.5	62.4	63.3	64.2	65.0
53	45.0	45.9	46.8	47.7	48.6	49 5	50.3	51.2	52.0	53.0	53.8	54.7	55.6	56.5	57.4	58.3	59.2	60.1	60.9	61.8	62.7	63.6	64.5	65.5	66.3
54	45.9	46 8	47.7	48.6	49.5	50.4	51.3	52.2	53.1	54.0	54.9	55.8	56.6	57.6	58.5	59.4	60.3	61.3	62.1	63.0	63.9	64.8	65.7	66.7	67.5
55	46.8	47.7	48.6	49.5	50.4	51.3	52.2	53.2	54.1	55.0	55.9	56 8	57.7	58.7	59.6	60.5	61.4	62.4	63.3	64.2	63.1	66.0	67.9	67.9	68.8
56	47.6	48.5	49.5	50.4	51.3	52.3	53.2	54.1	55.0	56.0	56.9	57.9	58.8	59.7	60.6	61.6	62.6	63.6	64.4	65.3	64.2	67.2	68 2	69.2	70.0
57	48.5	49.4	50.4	51.3	52.4	53.2	54.1	55.1	56.0	57.0	57.9	58.9	59.8	60.8	61.7	62.7	63.7	64.7	65.6	66.5	67.4	68.4	69.4	70.4	71.3
58	49.3	50.3	51.3	52.2	53.2	54.1	55.1	56.1	57.0	58.0	58.9	59.9	60.9	61.9	62.9	63 8	64.8	65.8	66.7	67.7	68.6	69.6	70.6	71.6	72.5
59	50.2	51.1	52.1	53.1	54.1	55.1	56 0	57.0	58 0	59.0	60.0	61.0	61.9	62.9	63.9	64.9	65.9	67.0	68.9	68.8	69.8	70.8	71.8	72.0	73.8
60	51.0	52.0	53.0	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0	72.0	73.0	74.0	75.0

	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
30	38.0	38.5	39.0	39.5	40.0	40.5	41.0	41.5	42.0	42.5	43.0	43.5	44.0	44.5	45.0	45.5	46.0	46.5	47.0	47.5	48.0	48.5	49.0	49.5	50.0
31	39.3	39.8	40.3	40.8	41.3	41.8	42.4	42.9	43.4	43.9	44.4	44.9	45.5	46.0	46.5	47.0	47.5	48.0	48.6	49.1	49.6	50.1	50.6	51.1	51.7
32	40.5	41.0	41.6	42.1	42.7	43.2	43.7	44.2	44.8	45.3	45.9	46.4	46.9	47.4	48.0	48.5	49.1	49.6	50.1	50.6	51.2	51.7	52.3	52.8	53.3
33	41.8	42.3	42.9	43.4	44.0	44.5	45.1	45.6	46.2	46.7	47.3	47.8	48.4	48.9	49.5	50.0	50.6	51.1	51.7	52.2	52.8	53.3	53.9	54.4	55.0
34	43.1	43.6	44.2	44.7	45.3	45.9	56.5	47.0	47.6	48.1	48.7	49.3	49.9	50.4	51.0	51.5	52.1	52.7	53.3	53.8	54.4	54.9	55.5	56.1	56.7
35	44.3	44.9	45.5	46.1	46.7	47.2	47.8	48.4	49.0	49.6	50.2	50.7	51.3	51.9	52.5	53.1	53.7	54.2	54.8	55.4	56.0	56.6	57.2	57.7	58.3
36	45.6	46.2	46.8	47.4	48.0	48.6	49.2	49.8	50.4	51.0	51.6	52.2	52.8	53.4	54.0	54.6	55.2	55.8	56.4	57.0	57.6	58.2	58.8	59.4	60.0
37	46.9	47.5	48.1	48.7	49.3	49.9	50.6	51.2	51.8	52.4	53.0	53.6	54.3	54.9	55.5	56.1	56.7	57.3	58.0	58.6	59.2	59.8	60.4	61.0	61.7
38	48.1	48.7	49.4	50.0	50.7	51.3	51.9	52.5	53.2	53.2	54.5	55.1	55.7	56.3	57.0	57.6	58.3	58.9	59.5	60.1	60.8	61.4	62.1	62.7	63.3
39	49.4	50.1	50.7	51.3	52.0	52.6	53.3	53.9	54.6	55.9	55.9	56.5	57.2	57.8	58.5	59.1	59.8	60.4	61.1	61.7	62.4	63.0	63.7	64.3	65.0
	76	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**
40	50.7	51.3	52.0	52.6	53.3	54.0	54.7	55.3	56.0	56.6	57.3	58.0	58.7	59.3	60.0	60.6	61.3	61.8	62.7	63.3	64.0	64.6	65.3	66.0	66.7
41	51.9	52.6	53.3	54.0	54.7	55.3	56.0	56.7	57.4	58.1	58.8	59.4	60.1	60.8	61.5	62.2	62.9	63.5	64.2	64.9	65.6	66.3	67.0	67.6	68.3
42	53.2	53.9	54.6	54.3	56.0	56.7	57.4	58.1	58.8	59.5	60.2	60.9	61.6	62.8	63.0	63.7	64.4	65.1	65.8	66.5	67.2	67.9	68.6	69.3	70.0
43	54.5	55.2	55.9	56.6	57.3	58.0	68.8	59.5	60.2	60.9	61.6	62.3	63.1	63.3	64.5	65.2	65.9	66.6	67.4	68.1	68.8	69.5	70.2	70.9	71.7
44	55.7	56.4	57.2	57.9	68.7	59.4	60.1	60.8	61.6	62.3	63.1	63.8	64.0	65.2	66.0	66.7	67.5	68.2	68.9	69.6	70.4	71.1	71.9	72.6	73.3
45	57.0	57.7	58.5	59.2	60.0	60.7	61.5	62.2	63.0	63.7	64.5	65.2	66.5	66.7	67.5	68.2	69.0	69.7	70.5	71.2	72.0	72.7	73.5	74.2	75.0
46	58.3	59.0	59.8	60.5	61.3	62.1	62.9	63.6	64.4	65.1	65.9	66.7	67.5	68.2	69.0	69.7	70.5	71.3	72.1	72.8	73.6	74.3	75.1	75.9	76.7
47	59.5	60.3	61.1	61.9	62.7	63.4	64.2	65.0	65.8	66.6	67.4	68.7	68.9	69.7	70.5	71.3	72.1	72.8	73.6	74.4	75.2	76.0	76.8	77.5	78.3
48	60.8	61.6	62.4	63.2	64.0	64.8	65.6	66.4	67.2	68.0	68.8	69.6	70.4	71.2	72.0	72.8	73.6	74.4	75.2	76.0	76.8	77.6	78.4	79.2	80.0
49	62.1	62.9	63.7	64.5	66.3	66.1	67.0	67.8	68.6	69.4	70.2	71.0	71.9	72.7	73.5	74.3	75.1	75.9	76.8	77.6	78.4	79.2	80.0	80.8	81.7
	76	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**
50	63.3	64.1	65.0	65.8	66.7	67.5	68.4	69.2	70.0	70.8	71.7	72.5	73.3	74.1	75.0	75.8	76.7	77.5	78.3	79.1	80.0	80.8	81.7	82.5	83.3
51	64.6	65.4	66.3	67.1	68.0	68.8	69.7	70.5	71.4	72.2	73.1	73.9	74.8	75.6	76.5	77.3	78.2	79.0	79.9	80.7	81.6	82.4	83.3	84.1	85.0
52	65.9	66.7	67.6	68.4	69.3	70.2	71.1	71.9	72.8	73.6	74.5	75.4	76.3	77.1	78.0	78.8	79.7	80.6	81.5	82.3	83.2	84.0	84.9	85.8	86.7
53	67.1	68.0	68.9	69.8	70.7	71.6	72.5	73.3	74.2	75.1	76.0	76.8	77.7	78.6	79.5	80.4	81.3	82.1	83.0	83.9	84.8	85.7	86.6	87.4	88.3
54	68.4	69.3	70.2	71.1	72.0	72.9	73.8	74.7	75.6	76.5	77.4	78.3	79.2	80.1	81.0	81.9	82.9	83.7	84.6	85.5	86.4	87.3	88.2	89.1	90.0
55	69.7	70.6	71.5	72.4	73.3	74.2	75.2	76.1	77.0	77.9	78.8	79.7	80.7	81.5	82.5	83.4	84.4	85.3	86.2	87.1	88.0	88.9	89.8	90.7	91.7
56	70.9	71.8	72.8	73.7	74.7	75.6	76.5	77.4	78.4	79.3	80.3	81.2	82.1	83.0	84.0	84.9	85.9	86.7	87.6	88.6	89.6	90.5	91.5	92.4	93.3
57	72.2	73.1	74.1	75.0	76.0	76.9	77.9	78.8	79.8	80.7	81.7	82.6	83.6	84.5	85.5	86.5	87.5	88.3	89.2	90.2	91.2	92.1	93.1	94.0	95.0
58	73.5	74.4	75.4	76.3	77.3	78.3	79.3	80.2	81.2	82.1	83.1	84.1	85.1	86.0	87.0	88.0	89.0	89.9	90.8	91.8	92.8	93.7	94.7	95.7	96.7
59	74.7	75.7	76.7	77.7	78.7	79.7	80.7	81.6	82.6	83.5	84.5	85.5	86.5	87.5	88.5	89.5	90.5	91.4	92.3	93.3	94.4	95.4	96.4	97.3	98.3
60	75.0	77.0	78.0	79.0	80.0	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0	90.0	91.0	92.0	93.0	94.0	95.0	96.0	97.0	98.0	99.0	100.0