

Apéndice



Uso de tablas

El uso generalizado de las calculadoras y las computadoras ha provocado que las tablas financieras cada día se utilicen menos. Sin embargo, resultan muy útiles en muchos problemas financieros, principalmente relacionados con el plazo o la tasa de interés, ya que tienen la ventaja de que con ellas se obtienen resultados con precisión y notoria agilidad.

En esta sección se incluyen las tablas financieras más comunes y de mayor utilidad para el estudioso y para el profesional de las finanzas, y proporcionan los factores que dependen del número de periodos np entre 1 y 50, o 60 en algunos casos, y la tasa de interés por periodo, $\frac{i}{p}$, entre $\frac{2}{3}$ y 4 por ciento.

Tabla 1

En esta tabla se encuentran los factores que corresponden al valor futuro de un capital $C = \$1.00$ después de np periodos, y con una tasa de interés anual i capitalizable en p periodos por año. Por tanto, estos factores se deberán multiplicar por el capital C que se invierte al iniciar el plazo.

En la primera y última columna de esta tabla, se localiza el valor de np desde 1 hasta 50 o 60 y en el renglón superior están algunos valores de $\frac{i}{p}$ desde 0.00667, $\frac{2}{3}\%$, hasta 0.04 o 4%, por periodo.

Por ejemplo, para calcular el valor futuro de un capital de \$75,000 que se invierte con una tasa del 27% anual capitalizable por quincenas y con plazo de año y medio, se tiene:

$$np = 1.5(24) = 36 \text{ e } \frac{i}{p} = \frac{0.27}{24} = 0.01125$$

En la segunda columna, la de $\frac{i}{p} = 0.01125$ de la página D-6 y el renglón que corresponde a $\frac{n}{p} = 36$, se encuentra el factor 1.49591613, que se multiplica por el capital $C = 75,000$ para encontrar el monto

$$M = 75,000(1.49591613)$$

$$M = 112,193.7098 \text{ o } \$112,193.71$$

Este resultado se comprueba con la fórmula del interés compuesto:

$$M = 75,000 \left(1 + \frac{0.27}{24} \right)^{36} \quad M = C \left(1 + \frac{i}{p} \right)^{np}$$

$$M = 75,000(1.01125)^{36}$$

$$M = 75,000(1.495916134) \text{ o } \$112,193.71$$

Note que en la tabla están los valores de $\left(1 + \frac{i}{p} \right)^{np}$ tal como se indica en su encabezado. También es cierto que si el valor de $\frac{i}{p}$ que se necesita, no está en la tabla pero está entre 0.00667 y 0.04, entonces se procede con una interpolación lineal.

Tabla 1

Monto con interés compuesto

Para un capital de \$1.00

$$M = \left(1 + \frac{i}{p}\right)^{np}$$

<i>np</i>	$\frac{i}{p}$	0.00667 ($\frac{2}{3}\%$)	0.0075 ($\frac{3}{4}\%$)	0.00875 ($\frac{7}{8}\%$)	0.01 (1%)	<i>np</i>
1		1.00666667	1.00750000	1.00875000	1.01000000	1
2		1.01337778	1.01505625	1.01757656	1.02010000	2
3		1.02013363	1.02266917	1.02648036	1.03030100	3
4		1.02693452	1.03033919	1.03546206	1.04060401	4
5		1.03378075	1.03806673	1.04452235	1.05101005	5
6		1.04067262	1.04585224	1.05366192	1.06152015	6
7		1.04761044	1.05369613	1.06288147	1.07213535	7
8		1.05459451	1.06159885	1.07218168	1.08285671	8
9		1.06162514	1.06956084	1.08156327	1.09368527	9
10		1.06870264	1.07758255	1.09102695	1.10462213	10
11		1.07582732	1.08566441	1.10057343	1.11566835	11
12		1.08299951	1.09380690	1.11020345	1.12682503	12
13		1.09021950	1.10201045	1.11991773	1.13809328	13
14		1.09748763	1.11027553	1.12971701	1.14947421	14
15		1.10480422	1.11860259	1.13960203	1.16096896	15
16		1.11216958	1.12699211	1.14957355	1.17257864	16
17		1.11958404	1.13544455	1.15963232	1.18430443	17
18		1.12704794	1.14396039	1.16977910	1.19614748	18
19		1.13456159	1.15254009	1.18001467	1.20810895	19
20		1.14212533	1.16118414	1.19033980	1.22019004	20
21		1.14973950	1.16989302	1.20075527	1.23239194	21
22		1.15740443	1.17866722	1.21126188	1.24471586	22
23		1.16512046	1.18750723	1.22186042	1.25716302	23
24		1.17288793	1.19641353	1.23255170	1.26973465	24
25		1.18070718	1.20538663	1.24333653	1.28243200	25
26		1.18857857	1.21442703	1.25421572	1.29525631	26
27		1.19650242	1.22353523	1.26519011	1.30820888	27

28	1.20447911	1.23271175	1.27626052	1.32129097	28
29	1.21250897	1.24195709	1.28742780	1.33450388	29
30	1.22059236	1.25127176	1.29869280	1.34784892	30
31	1.22872964	1.26065630	1.31005636	1.36132740	31
32	1.23692117	1.27011122	1.32151935	1.37494068	32
33	1.24516731	1.27963706	1.33308265	1.38869009	33
34	1.25346843	1.28923434	1.34474712	1.40257699	34
35	1.26182489	1.29890359	1.35651366	1.41660276	35
36	1.27023705	1.30864537	1.36838315	1.43076878	36
37	1.27870530	1.31846021	1.38035650	1.44507647	37
38	1.28723000	1.32834866	1.39243462	1.45952724	38
39	1.29581153	1.33831128	1.40461843	1.47412251	39
40	1.30445028	1.34834861	1.41690884	1.48886373	40
41	1.31314661	1.35846123	1.42930679	1.50375237	41
42	1.32190092	1.36864969	1.44181322	1.51878989	42
43	1.33071360	1.37891456	1.45442909	1.53397779	43
44	1.33958502	1.38925642	1.46715534	1.54931757	44
45	1.34851559	1.39967584	1.47999295	1.56481075	45
46	1.35750569	1.41017341	1.49294289	1.58045885	46
47	1.36655573	1.42074971	1.50600614	1.59626344	47
48	1.37566610	1.43140533	1.51918370	1.61222608	48
49	1.38483721	1.44214087	1.53247655	1.62834834	49
50	1.39406946	1.45295693	1.54588572	1.64463182	50
51	1.40336325	1.46385411	1.55941222	1.66107814	51
52	1.41271901	1.47483301	1.57305708	1.67768892	52
53	1.42213713	1.48589426	1.58682133	1.69446581	53
54	1.43161805	1.49703847	1.60070602	1.71141047	54
55	1.44116217	1.50826626	1.61471219	1.72852457	55
56	1.45076992	1.51957825	1.62884093	1.74580982	56
57	1.46044172	1.53097509	1.64309328	1.76326792	57
58	1.47017799	1.54245740	1.65747035	1.78090060	58
59	1.47997918	1.55402583	1.67197322	1.79870960	59
60	1.48984571	1.56568103	1.68660298	1.81669670	60

Tabla 1
Monto con interés compuesto
Para un capital de \$1.00

$$M = \left(1 + \frac{i}{p}\right)^{np}$$

np $\frac{i}{p}$	0.01125 ($1\frac{1}{8}\%$)	0.0125 ($1\frac{1}{4}\%$)	0.01375 ($1\frac{3}{8}\%$)	0.015 ($1\frac{1}{2}\%$)	np
1	1.01125000	1.01250000	1.01375000	1.01500000	1
2	1.02262656	1.02515625	1.02768906	1.03022500	2
3	1.03413111	1.03797070	1.04181979	1.04567838	3
4	1.04576509	1.05094534	1.05614481	1.06136355	4
5	1.05752994	1.06408215	1.07066680	1.07728400	5
6	1.06942716	1.07738318	1.08538847	1.09344326	6
7	1.08145821	1.09085047	1.10031256	1.10984491	7
8	1.09362462	1.10448610	1.11544186	1.12649259	8
9	1.10592789	1.11829218	1.13077918	1.14338998	9
10	1.11836958	1.13227083	1.14632740	1.16054083	10
11	1.13095124	1.14642422	1.16208940	1.17794894	11
12	1.14367444	1.16075452	1.17806813	1.19561817	12
13	1.15654078	1.17526395	1.19426656	1.21355244	13
14	1.16955186	1.18995475	1.21068773	1.23175573	14
15	1.18270932	1.20482918	1.22733469	1.25023207	15
16	1.19601480	1.21988955	1.24421054	1.26898555	16
17	1.20946997	1.23513817	1.26131843	1.28802033	17
18	1.22307650	1.25057739	1.27866156	1.30734064	18
19	1.23683611	1.26620961	1.29624316	1.32695075	19
20	1.25075052	1.28203723	1.31406650	1.34685501	20
21	1.26482146	1.29806270	1.33213492	1.36705783	21
22	1.27905071	1.31428848	1.35045177	1.38756370	22
23	1.29344003	1.33071709	1.36902048	1.40837715	23
24	1.30799123	1.34735105	1.38784451	1.42950281	24
25	1.32270613	1.36419294	1.40692738	1.45094535	25

26	1.33758657	1.38124535	1.42627263	1.47270953	26
27	1.35263442	1.39851092	1.44588388	1.49480018	27
28	1.36785156	1.41599230	1.46576478	1.51722218	28
29	1.38323989	1.43369221	1.48591905	1.53998051	29
30	1.39880134	1.45161336	1.50635043	1.56308022	30
31	1.41453785	1.46975853	1.52706275	1.58652642	31
32	1.43045140	1.48813051	1.54805986	1.61032432	32
33	1.44654398	1.50673214	1.56934569	1.63447918	33
34	1.46281760	1.52556629	1.59092419	1.65899637	34
35	1.47927430	1.54463587	1.61279940	1.68388132	35
36	1.49591613	1.56394382	1.63497539	1.70913954	36
37	1.51274519	1.58349312	1.65745630	1.73477663	37
38	1.52976357	1.60328678	1.68024633	1.76079828	38
39	1.54697341	1.62332787	1.70334971	1.78721025	39
40	1.56437687	1.64361946	1.72677077	1.81401841	40
41	1.58197611	1.66416471	1.75051387	1.84122868	41
42	1.59977334	1.68496677	1.77458343	1.86884712	42
43	1.61777079	1.70602885	1.79898396	1.89687982	43
44	1.63597071	1.72735421	1.82371999	1.92533302	44
45	1.65437538	1.74894614	1.84879614	1.95421301	45
46	1.67298710	1.77080797	1.87421708	1.98352621	46
47	1.69180821	1.79294306	1.89998757	2.01327910	47
48	1.71084105	1.81535485	1.92611240	2.04347829	48
49	1.73008801	1.83804679	1.95259644	2.07413046	49
50	1.74955150	1.86102237	1.97944464	2.10524242	50

Tabla 1
Monto con interés compuesto
Para un capital de \$1.00

$$M = \left(1 + \frac{i}{p}\right)^{np}$$

<i>np</i>	$\frac{i}{p}$	0.01625 ($1\frac{5}{8}\%$)	0.0175 ($1\frac{3}{4}\%$)	0.01875 ($1\frac{7}{8}\%$)	0.02 (2%)	<i>np</i>
1		1.01625000	1.01750000	1.01875000	1.02000000	1
2		1.03276406	1.03530625	1.03785156	1.04040000	2
3		1.04954648	1.05342411	1.05731128	1.06120800	3
4		1.06660161	1.07185903	1.07713587	1.08243216	4
5		1.08393388	1.09061656	1.09733216	1.10408080	5
6		1.10154781	1.10970235	1.11790714	1.12616242	6
7		1.11944796	1.12912215	1.13886790	1.14868567	7
8		1.13763899	1.14888178	1.16022167	1.17165938	8
9		1.15612563	1.16898721	1.18197583	1.19509257	9
10		1.17491267	1.18944449	1.20413788	1.21899442	10
11		1.19400500	1.21025977	1.22671546	1.24337431	11
12		1.21340758	1.23143931	1.24971638	1.26824179	12
13		1.23312545	1.25298950	1.27314856	1.29360663	13
14		1.25316374	1.27491682	1.29702009	1.31947876	14
15		1.27352765	1.29722786	1.32133922	1.34586834	15
16		1.29422248	1.31992935	1.34611433	1.37278571	16
17		1.31525359	1.34302811	1.37135398	1.40024142	17
18		1.33662646	1.36653111	1.39706686	1.42824625	18
19		1.35834664	1.39044540	1.42326187	1.45681117	19
20		1.38041977	1.41477820	1.44994803	1.48594740	20
21		1.40285160	1.43953681	1.47713455	1.51566634	21
22		1.42564793	1.46472871	1.50483082	1.54597967	22
23		1.44881471	1.49036146	1.53304640	1.57689926	23
24		1.47235795	1.51644279	1.56179102	1.60843725	24
25		1.49628377	1.54298054	1.59107460	1.64060599	25

26	1.52059838	1.56998269	1.62090725	1.67341811	26
27	1.54530810	1.59745739	1.65129926	1.70688648	27
28	1.57041936	1.62541290	1.68226112	1.74102421	28
29	1.59593868	1.65385762	1.71380352	1.77584469	29
30	1.62187268	1.68280013	1.74593734	1.81136158	30
31	1.64822811	1.71224913	1.77867366	1.84758882	31
32	1.67501182	1.74221349	1.81202379	1.88454059	32
33	1.70223076	1.77270223	1.84599924	1.92223140	33
34	1.72989201	1.80372452	1.88061172	1.96067603	34
35	1.75800275	1.83528970	1.91587319	1.99988955	35
36	1.78657030	1.86740727	1.95179582	2.03988734	36
37	1.81560207	1.90008689	1.98839199	2.08068509	37
38	1.84510560	1.93333841	2.02567434	2.12229879	38
39	1.87508857	1.96717184	2.06365573	2.16474477	39
40	1.90555875	2.00159734	2.10234928	2.20803966	40
41	1.93652408	2.03662530	2.14176833	2.25220046	41
42	1.96799260	2.07226624	2.18192648	2.29724447	42
43	1.99997248	2.10853090	2.22283760	2.34318936	43
44	2.03247203	2.14543019	2.26451581	2.39005314	44
45	2.06549970	2.18297522	2.30697548	2.43785421	45
46	2.09906407	2.22117728	2.35023127	2.48661129	46
47	2.13317387	2.26004789	2.39429811	2.53634352	47
48	2.16783794	2.29959872	2.43919120	2.58707039	48
49	2.20306531	2.33984170	2.48492603	2.63881179	49
50	2.23886512	2.38078893	2.53151839	2.69158803	50

Tabla 1

Monto con interés compuesto

Para un capital de \$1.00

$$M = \left(1 + \frac{i}{p}\right)^{np}$$

<i>np</i>	$\frac{i}{p}$	0.0225 (2¼%)	0.025 (2½%)	0.0275 (2¾%)	0.03 (3%)	<i>np</i>
1		1.02250000	1.02500000	1.02750000	1.03000000	1
2		1.04550625	1.05062500	1.05575625	1.06090000	2
3		1.06903014	1.07689063	1.08478955	1.09272700	3
4		1.09308332	1.10381289	1.11462126	1.12550881	4
5		1.11767769	1.13140821	1.14527334	1.15927407	5
6		1.14282544	1.15969342	1.17676836	1.19405230	6
7		1.16853901	1.18868575	1.20912949	1.22987387	7
8		1.19483114	1.21840290	1.24238055	1.26677008	8
9		1.22171484	1.24886297	1.27654602	1.30477318	9
10		1.24920343	1.28008454	1.31165103	1.34391638	10
11		1.27731050	1.31208666	1.34772144	1.38423387	11
12		1.30604999	1.34488882	1.38478378	1.42576089	12
13		1.33543611	1.37851104	1.42286533	1.46853371	13
14		1.36548343	1.41297382	1.46199413	1.51258972	14
15		1.39620680	1.44829817	1.50219896	1.55796742	15
16		1.42762146	1.48450562	1.54350944	1.60470644	16
17		1.45974294	1.52161826	1.58595595	1.65284763	17
18		1.49258716	1.55965872	1.62956973	1.70243306	18
19		1.52617037	1.59865019	1.67438290	1.75350605	19
20		1.56050920	1.63861644	1.72042843	1.80611123	20
21		1.59562066	1.67958185	1.76774021	1.86029457	21
22		1.63152212	1.72157140	1.81635307	1.91610341	22
23		1.66823137	1.76461068	1.86630278	1.97358651	23
24		1.70576658	1.80872595	1.91762610	2.03279411	24
25		1.74414632	1.85394410	1.97036082	2.09377793	25

26	1.78338962	1.90029270	2.02454575	2.15659127	26
27	1.82351588	1.94780002	2.08022075	2.22128901	27
28	1.86454499	1.99649502	2.13742682	2.28792768	28
29	1.90649725	2.04640739	2.19620606	2.35656551	29
30	1.94939344	2.09756758	2.25660173	2.42726247	30
31	1.99325479	2.15000677	2.31865828	2.50008035	31
32	2.03810303	2.20375694	2.38242138	2.57508276	32
33	2.08396034	2.25885086	2.44793797	2.65233524	33
34	2.13084945	2.31532213	2.51525626	2.73190530	34
35	2.17879356	2.37320519	2.58442581	2.81386245	35
36	2.22781642	2.43253532	2.65549752	2.89827833	36
37	2.27794229	2.49334870	2.72852370	2.98522668	37
38	2.32919599	2.55568242	2.80355810	3.07478348	38
39	2.38160290	2.61957448	2.88065595	3.16702698	39
40	2.43518897	2.68506384	2.95987399	3.26203779	40
41	2.48998072	2.75219043	3.04127052	3.35989893	41
42	2.54600528	2.82099520	3.12490546	3.46069589	42
43	2.60329040	2.89152008	3.21084036	3.56451677	43
44	2.66186444	2.96380808	3.29913847	3.67145227	44
45	2.72175639	3.03790328	3.38986478	3.78159584	45
46	2.78299590	3.11385086	3.48308606	3.89504372	46
47	2.84561331	3.19169713	3.57887093	4.01189503	47
48	2.90963961	3.27148956	3.67728988	4.13225188	48
49	2.97510650	3.35327680	3.77841535	4.25621944	49
50	3.04204640	3.43710872	3.88232177	4.38390602	50

Tabla 1
Monto con interés compuesto
Para un capital de \$1.00

$$M = \left(1 + \frac{i}{p}\right)^{np}$$

<i>np</i>	$\frac{i}{p}$	0.0325 (3¼%)	0.035 (3½%)	0.0375 (3¾%)	0.04 (4%)	<i>np</i>
1		1.03250000	1.03500000	1.03750000	1.04000000	1
2		1.06605625	1.07122500	1.07640625	1.08160000	2
3		1.10070308	1.10871788	1.11677148	1.12486400	3
4		1.13647593	1.14752300	1.15865042	1.16985856	4
5		1.17341140	1.18768631	1.20209981	1.21665290	5
6		1.21154727	1.22925533	1.24717855	1.26531902	6
7		1.25092255	1.27227926	1.29394774	1.31593178	7
8		1.29157754	1.31680904	1.34247078	1.36856905	8
9		1.33355381	1.36289735	1.39281344	1.42331181	9
10		1.37689430	1.41059876	1.44504394	1.48024428	10
11		1.42164337	1.45996972	1.49923309	1.53945406	11
12		1.46784678	1.51106866	1.55545433	1.60103222	12
13		1.51555180	1.56395606	1.61378387	1.66507351	13
14		1.56480723	1.61869452	1.67430076	1.73167645	14
15		1.61566347	1.67534883	1.73708704	1.80094351	15
16		1.66817253	1.73398604	1.80222781	1.87298125	16
17		1.72238814	1.79467555	1.86981135	1.94790050	17
18		1.77836575	1.85748920	1.93992927	2.02581652	18
19		1.83616264	1.92250132	2.01267662	2.10684918	19
20		1.89583792	1.98978886	2.08815200	2.19112314	20
21		1.95745266	2.05943147	2.16645770	2.27876807	21
22		2.02106987	2.13151158	2.24769986	2.36991879	22
23		2.08675464	2.20611448	2.33198860	2.46471554	23
24		2.15457416	2.28332849	2.41943818	2.56330416	24
25		2.22459782	2.36324498	2.51016711	2.66583633	25

26	2.29689725	2.44595856	2.60429838	2.77246978	26
27	2.37154641	2.53156711	2.70195956	2.88336858	27
28	2.44862167	2.62017196	2.80328305	2.99870332	28
29	2.52820188	2.71187798	2.90840616	3.11865145	29
30	2.61036844	2.80679370	3.01747139	3.24339751	30
31	2.69520541	2.90503148	3.13062657	3.37313341	31
32	2.78279959	3.00670759	3.24802507	3.50805875	32
33	2.87324058	3.11194235	3.36982601	3.64838110	33
34	2.96662089	3.22086033	3.49619448	3.79431634	34
35	3.06303607	3.33359045	3.62730178	3.94608899	35
36	3.16258475	3.45026611	3.76332559	4.10393255	36
37	3.26536875	3.57102543	3.90445030	4.26808986	37
38	3.37149323	3.69601132	4.05086719	4.43881345	38
39	3.48106676	3.82537171	4.20277471	4.61636599	39
40	3.59420143	3.95925972	4.36037876	4.80102063	40
41	3.71101298	4.09783381	4.52389296	4.99306145	41
42	3.83162090	4.24125799	4.69353895	5.19278391	42
43	3.95614858	4.38970202	4.86954666	5.40049527	43
44	4.08472341	4.54334160	5.05215466	5.61651508	44
45	4.21747692	4.70235855	5.24161046	5.84117568	45
46	4.35454492	4.86694110	5.43817085	6.07482271	46
47	4.49606763	5.03728404	5.64210226	6.31781562	47
48	4.64218983	5.21358898	5.85368109	6.57052824	48
49	4.79306100	5.39606459	6.07319413	6.83334937	49
50	4.94883548	5.58492686	6.30093891	7.10668335	50

Tabla 2

Como se indica en su parte superior, esta tabla contiene los valores de $\left(1 + \frac{i}{p}\right)^{-np}$, que son el recíproco de $\left(1 + \frac{i}{p}\right)^{np}$ de la tabla 1 y sirven para encontrar el valor presente C de un monto acumulado $M = \$1.00$.

A manera de ilustración, suponga que se desea conocer el capital que se invierte al 21% anual capitalizable por meses para disponer de \$12,000 en 7 meses.

En este caso: $M = 12,000$, $np = 7$, $i = 0.21$ e $\frac{i}{p} = 0.21 = 0.0175$.

En la tabla de la página D-18 se observa que en el cruce de la tercera columna, la de $\frac{i}{p} = 0.0175$, con el renglón de $np = 7$, está el factor 0.88564378 (en un recuadro) y éste deberá multiplicarse por los 12,000, para obtener el capital, es decir:

$$C = 12,000(0.88564378)$$

$$C = 10,627.72536 \text{ o } \$10,627.73$$

Resultado que puede comprobarse también con la fórmula del interés compuesto.

Importante

Estas tablas, 1 y 2, pueden emplearse de manera inversa, es decir, con el plazo como incógnita, por ejemplo, para determinar el número de periodos en los que un capital arbitrario, que se invierte al 39% anual capitalizable por semanas, crece 50 por ciento.

El monto es $M = C + (0.50)C$ o $M = (1.50)C$

La tasa por periodo es $\frac{i}{p} = \frac{0.39}{52}$ o 0.0075

Al remplazar en la fórmula del interés compuesto queda

$$(1.50)C = C(1 + 0.0075)^{np} \quad M = C\left(1 + \frac{i}{p}\right)^{np}$$

De donde $(1.0075)^{np} = 1.50$

(A)

En la tercera columna de la tabla 1 se busca este valor, 1.50. En el renglón de $np = 54$ de la página D-4 está el inmediato anterior 1.49703847 (en un recuadro) y en $np = 55$ está el inmediato superior 1.50826626. Se acepta el más cercano a 1.50 y por tanto, se requieren 54 semanas para que el supuesto capital C , no importa su magnitud, crezca 50%, aproximadamente.

Este problema puede resolverse también con la tabla 2, considerando el recíproco de la ecuación (A), es decir, buscando en dicha tabla el valor de $0.6\bar{6}$ porque

$$(1.0075)^{-np} = \frac{1}{1.5} = 0.66666666$$

Tabla 2
Valor presente con interés compuesto
Para un monto de \$1.00

$$C = \left(1 + \frac{i}{p}\right)^{-np}$$

<i>np</i>	$\frac{i}{p}$	0.00667 ($\frac{2}{3}\%$)	0.0075 ($\frac{3}{4}\%$)	0.00875 ($\frac{7}{8}\%$)	0.01 (1%)	<i>np</i>
1		0.99337748	0.99255583	0.99132590	0.99009901	1
2		0.98679882	0.98516708	0.98272704	0.98029605	2
3		0.98026373	0.97783333	0.97420276	0.97059015	3
4		0.97377192	0.97055417	0.96575243	0.96098034	4
5		0.96732310	0.96332920	0.95737539	0.95146569	5
6		0.96091699	0.95615802	0.94907102	0.94204524	6
7		0.95455330	0.94904022	0.94083868	0.93271805	7
8		0.94823175	0.94197540	0.93267775	0.92348322	8
9		0.94195207	0.93496318	0.92458761	0.91433982	9
10		0.93571398	0.92800315	0.91656765	0.90528695	10
11		0.92951720	0.92109494	0.90861724	0.89632372	11
12		0.92336145	0.91423815	0.90073581	0.88744923	12
13		0.91724648	0.90743241	0.89292273	0.87866260	13
14		0.91117200	0.90067733	0.88517743	0.86996297	14
15		0.90513775	0.89397254	0.87749931	0.86134947	15
16		0.89914346	0.88731766	0.86988779	0.85282126	16
17		0.89318886	0.88071231	0.86234230	0.84437749	17
18		0.88727371	0.87415614	0.85486225	0.83601731	18
19		0.88139772	0.86764878	0.84744709	0.82773992	19
20		0.87556065	0.86118985	0.84009625	0.81954447	20
21		0.86976224	0.85477901	0.83280917	0.81143017	21
22		0.86400222	0.84841589	0.82558530	0.80339621	22
23		0.85828035	0.84210014	0.81842409	0.79544179	23
24		0.85259638	0.83583140	0.81132499	0.78756613	24
25		0.84695004	0.82960933	0.80428748	0.77976844	25
26		0.84134110	0.82343358	0.79731101	0.77204796	26
27		0.83576931	0.81730380	0.79039505	0.76440392	27

28	0.83023441	0.81121966	0.78353908	0.75683557	28
29	0.82473617	0.80518080	0.77674258	0.74934215	29
30	0.81927434	0.79918690	0.77000504	0.74192292	30
31	0.81384868	0.79323762	0.76332594	0.73457715	31
32	0.80845896	0.78733262	0.75670477	0.72730411	32
33	0.80310492	0.78147158	0.75014104	0.72010307	33
34	0.79778635	0.77565418	0.74363424	0.71297334	34
35	0.79250299	0.76988008	0.73718388	0.70591420	35
36	0.78725463	0.76414896	0.73078947	0.69892495	36
37	0.78204102	0.75846051	0.72445053	0.69200490	37
38	0.77686194	0.75281440	0.71816657	0.68515337	38
39	0.77171716	0.74721032	0.71193712	0.67836967	39
40	0.76660645	0.74164796	0.70576171	0.67165314	40
41	0.76152959	0.73612701	0.69963986	0.66500311	41
42	0.75648635	0.73064716	0.69357111	0.65841892	42
43	0.75147650	0.72520809	0.68755500	0.65189992	43
44	0.74649984	0.71980952	0.68159108	0.64544546	44
45	0.74155613	0.71445114	0.67567889	0.63905492	45
46	0.73664516	0.70913264	0.66981798	0.63272764	46
47	0.73176672	0.70385374	0.66400792	0.62646301	47
48	0.72692058	0.69861414	0.65824824	0.62026041	48
49	0.72210654	0.69341353	0.65253853	0.61411921	49
50	0.71732437	0.68825165	0.64687835	0.60803882	50
51	0.71257388	0.68312819	0.64126726	0.60201864	51
52	0.70785485	0.67804286	0.63570484	0.59605806	52
53	0.70316707	0.67299540	0.63019067	0.59015649	53
54	0.69851033	0.66798551	0.62472433	0.58431336	54
55	0.69388444	0.66301291	0.61930541	0.57852808	55
56	0.68928918	0.65807733	0.61393349	0.57280008	56
57	0.68472435	0.65317849	0.60860817	0.56712879	57
58	0.68018975	0.64831612	0.60332904	0.56151365	58
59	0.67568518	0.64348995	0.59809571	0.55595411	59
60	0.67121044	0.63869970	0.59290776	0.55044962	60

Tabla 2**Valor presente con interés compuesto**

Para un monto de \$1.00

$$C = \left(1 + \frac{i}{p}\right)^{-np}$$

np	$\frac{i}{p}$	0.01125 ($1\frac{1}{8}\%$)	0.0125 ($1\frac{1}{4}\%$)	0.01375 ($1\frac{3}{8}\%$)	0.015 ($1\frac{1}{2}\%$)	np
1		0.98887515	0.98765432	0.98643650	0.98522167	1
2		0.97787407	0.97546106	0.97305696	0.97066175	2
3		0.96699537	0.96341833	0.95985890	0.95631699	3
4		0.95623770	0.95152428	0.94683986	0.94218423	4
5		0.94559970	0.93977706	0.93399739	0.92826033	5
6		0.93508005	0.92817488	0.92132912	0.91454219	6
7		0.92467743	0.91671593	0.90883267	0.90102679	7
8		0.91439054	0.90539845	0.89650571	0.88771112	8
9		0.90421808	0.89422069	0.88434596	0.87459224	9
10		0.89415880	0.88318093	0.87235113	0.86166723	10
11		0.88421142	0.87227746	0.86051899	0.84893323	11
12		0.87437470	0.86150860	0.84884734	0.83638742	12
13		0.86464742	0.85087269	0.83733400	0.82402702	13
14		0.85502835	0.84036809	0.82597682	0.81184928	14
15		0.84551629	0.82999318	0.81477368	0.79985150	15
16		0.83611005	0.81974635	0.80372250	0.78803104	16
17		0.82680846	0.80962602	0.79282120	0.77638526	17
18		0.81761034	0.79963064	0.78206777	0.76491159	18
19		0.80851455	0.78975866	0.77146020	0.75360747	19
20		0.79951995	0.78000855	0.76099649	0.74247042	20
21		0.79062542	0.77037881	0.75067472	0.73149795	21
22		0.78182983	0.76086796	0.74049294	0.72068763	22
23		0.77313210	0.75147453	0.73044926	0.71003708	23
24		0.76453112	0.74219707	0.72054181	0.69954392	24
25		0.75602583	0.73303414	0.71076874	0.68920583	25

26	0.74761516	0.72398434	0.70112823	0.67902052	26
27	0.73929806	0.71504626	0.69161847	0.66898574	27
28	0.73107348	0.70621853	0.68223771	0.65909925	28
29	0.72294040	0.69749978	0.67298417	0.64935887	29
30	0.71489780	0.68888867	0.66385615	0.63976243	30
31	0.70694467	0.68038387	0.65485194	0.63030781	31
32	0.69908002	0.67198407	0.64596985	0.62099292	32
33	0.69130287	0.66368797	0.63720824	0.61181568	33
34	0.68361223	0.65549429	0.62856546	0.60277407	34
35	0.67600715	0.64740177	0.62003991	0.59386608	35
36	0.66848667	0.63940916	0.61163000	0.58508974	36
37	0.66104986	0.63151522	0.60333416	0.57644309	37
38	0.65369578	0.62371873	0.59515083	0.56792423	38
39	0.64642352	0.61601850	0.58707850	0.55953126	39
40	0.63923216	0.60841334	0.57911566	0.55126232	40
41	0.63212080	0.60090206	0.57126083	0.54311559	41
42	0.62508855	0.59348352	0.56351253	0.53508925	42
43	0.61813454	0.58615656	0.55586933	0.52718153	43
44	0.61125789	0.57892006	0.54832979	0.51939067	44
45	0.60445774	0.57177290	0.54089252	0.51171494	45
46	0.59773324	0.56471397	0.53355612	0.50415265	46
47	0.59108355	0.55774219	0.52631923	0.49670212	47
48	0.58450784	0.55085649	0.51918050	0.48936170	48
49	0.57800528	0.54405579	0.51213860	0.48212975	49
50	0.57157506	0.53733905	0.50519220	0.47500468	50

Tabla 2
Valor presente con interés compuesto
Para un monto de \$1.00

$$C = \left(1 + \frac{i}{p}\right)^{-np}$$

<i>np</i>	$\frac{i}{p}$	0.01625 (1 $\frac{5}{8}$ %)	0.0175 (1 $\frac{3}{4}$ %)	0.01875 (1 $\frac{7}{8}$ %)	0.02 (2%)	<i>np</i>
1		0.98400984	0.98280098	0.98159509	0.98039216	1
2		0.96827537	0.96589777	0.96352892	0.96116878	2
3		0.95279249	0.94928528	0.94579526	0.94232233	3
4		0.93755718	0.93295851	0.92838799	0.92384543	4
5		0.92256549	0.91691254	0.91130109	0.90573081	5
6		0.90781352	0.90114254	0.89452868	0.88797138	6
7		0.89329744	0.88564378	0.87806496	0.87056018	7
8		0.87901347	0.87041157	0.86190426	0.85349037	8
9		0.86495791	0.85544135	0.84604099	0.83675527	9
10		0.85112709	0.84072860	0.83046968	0.82034830	10
11		0.83751743	0.82626889	0.81518496	0.80426304	11
12		0.82412539	0.81205788	0.80018156	0.78849318	12
13		0.81094750	0.79809128	0.78545429	0.77303253	13
14		0.79798032	0.78436490	0.77099808	0.75787502	14
15		0.78522048	0.77087459	0.75680793	0.74301473	15
16		0.77266468	0.75761631	0.74287895	0.72844581	16
17		0.76030965	0.74458605	0.72920633	0.71416256	17
18		0.74815218	0.73177990	0.71578536	0.70015937	18
19		0.73618911	0.71919401	0.70261139	0.68643076	19
20		0.72441732	0.70682458	0.68967989	0.67297133	20
21		0.71283378	0.69466789	0.67698640	0.65977582	21
22		0.70143545	0.68272028	0.66452653	0.64683904	22
23		0.69021938	0.67097817	0.65229598	0.63415592	23
24		0.67918267	0.65943800	0.64029053	0.62172149	24
25		0.66832243	0.64809632	0.62850604	0.60953087	25

26	0.65763584	0.63694970	0.61693845	0.59757928	26
27	0.64712014	0.62599479	0.60558375	0.58586204	27
28	0.63677259	0.61522829	0.59443804	0.57437455	28
29	0.62659049	0.60464697	0.58349746	0.56311231	29
30	0.61657121	0.59424764	0.57275824	0.55207089	30
31	0.60671214	0.58402716	0.56221668	0.54124597	31
32	0.59701071	0.57398247	0.55186913	0.53063330	32
33	0.58746442	0.56411053	0.54171203	0.52022873	33
34	0.57807077	0.55440839	0.53174187	0.51002817	34
35	0.56882732	0.54487311	0.52195521	0.50002761	35
36	0.55973168	0.53550183	0.51234867	0.49022315	36
37	0.55078148	0.52629172	0.50291894	0.48061093	37
38	0.54197440	0.51724002	0.49366277	0.47118719	38
39	0.53330814	0.50834400	0.48457695	0.46194822	39
40	0.52478046	0.49960098	0.47565836	0.45289042	40
41	0.51638914	0.49100834	0.46690391	0.44401021	41
42	0.50813199	0.48256348	0.45831058	0.43530413	42
43	0.50000688	0.47426386	0.44987542	0.42676875	43
44	0.49201169	0.46610699	0.44159550	0.41840074	44
45	0.48414434	0.45809040	0.43346798	0.41019680	45
46	0.47640280	0.45021170	0.42549004	0.40215373	46
47	0.46878504	0.44246850	0.41765894	0.39426836	47
48	0.46128909	0.43485848	0.40997196	0.38653761	48
49	0.45391301	0.42737934	0.40242647	0.37895844	49
50	0.44665487	0.42002883	0.39501984	0.37152788	50

Tabla 2
Valor presente con interés compuesto
Para un monto de \$1.00

$$C = \left(1 + \frac{i}{p}\right)^{-np}$$

np	$\frac{i}{p}$	0.0225 ($2\frac{1}{4}\%$)	0.025 ($2\frac{1}{2}\%$)	0.0275 ($2\frac{3}{4}\%$)	0.03 (3%)	np
1		0.97799511	0.97560976	0.97323601	0.97087379	1
2		0.95647444	0.95181440	0.94718833	0.94259591	2
3		0.93542732	0.92859941	0.92183779	0.91514166	3
4		0.91484335	0.90595064	0.89716573	0.88848705	4
5		0.89471232	0.88385429	0.87315400	0.86260878	5
6		0.87502427	0.86229687	0.84978491	0.83748426	6
7		0.85576946	0.84126524	0.82704128	0.81309151	7
8		0.83693835	0.82074657	0.80490635	0.78940923	8
9		0.81852161	0.80072836	0.78336385	0.76641673	9
10		0.80051013	0.78119840	0.76239791	0.74409391	10
11		0.78289499	0.76214478	0.74199310	0.72242128	11
12		0.76566748	0.74355589	0.72213440	0.70137988	12
13		0.74881905	0.72542038	0.70280720	0.68095134	13
14		0.73234137	0.70772720	0.68399728	0.66111781	14
15		0.71622628	0.69046556	0.66569078	0.64186195	15
16		0.70046580	0.67362493	0.64787424	0.62316694	16
17		0.68505212	0.65719506	0.63053454	0.60501645	17
18		0.66997763	0.64116591	0.61365892	0.58739461	18
19		0.65523484	0.62552772	0.59723496	0.57028603	19
20		0.64081647	0.61027094	0.58125057	0.55367575	20
21		0.62671538	0.59538629	0.56569398	0.53754928	21
22		0.61292457	0.58086467	0.55055375	0.52189250	22
23		0.59943724	0.56669724	0.53581874	0.50669175	23
24		0.58624668	0.55287535	0.52147809	0.49193374	24
25		0.57334639	0.53939059	0.50752126	0.47760557	25

26	0.56072997	0.52623472	0.49393796	0.46369473	26
27	0.54839117	0.51339973	0.48071821	0.45018906	27
28	0.53632388	0.50087778	0.46785227	0.43707675	28
29	0.52452213	0.48866125	0.45533068	0.42434636	29
30	0.51298008	0.47674269	0.44314421	0.41198676	30
31	0.50169201	0.46511481	0.43128391	0.39998715	31
32	0.49065233	0.45377055	0.41974103	0.38833703	32
33	0.47985558	0.44270298	0.40850708	0.37702625	33
34	0.46929641	0.43190534	0.39757380	0.36604490	34
35	0.45896960	0.42137107	0.38693314	0.35538340	35
36	0.44887002	0.41109372	0.37657727	0.34503243	36
37	0.43899268	0.40106705	0.36649856	0.33498294	37
38	0.42933270	0.39128492	0.35668959	0.32522615	38
39	0.41988528	0.38174139	0.34714316	0.31575355	39
40	0.41064575	0.37243062	0.33785222	0.30655684	40
41	0.40160954	0.36334695	0.32880995	0.29762800	41
42	0.39277216	0.35448483	0.32000968	0.28895922	42
43	0.38412925	0.34583886	0.31144495	0.28054294	43
44	0.37567653	0.33740376	0.30310944	0.27237178	44
45	0.36740981	0.32917440	0.29499702	0.26443862	45
46	0.35932500	0.32114576	0.28710172	0.25673653	46
47	0.35141809	0.31331294	0.27941773	0.24925876	47
48	0.34368518	0.30567116	0.27193940	0.24199880	48
49	0.33612242	0.29821576	0.26466122	0.23495029	49
50	0.32872608	0.29094221	0.25757783	0.22810708	50

Tabla 2
Valor presente con interés compuesto
Para un monto de \$1.00

$$C = \left(1 + \frac{i}{p}\right)^{-np}$$

<i>np</i>	$\frac{i}{p}$	0.0325 (3¼%)	0.035 (3½%)	0.0375 (3¾%)	0.04 (4%)	<i>np</i>
1		0.96852300	0.96618357	0.96385542	0.96153846	1
2		0.93803681	0.93351070	0.92901727	0.92455621	2
3		0.90851022	0.90194271	0.89543834	0.88899636	3
4		0.87991305	0.87144223	0.86307310	0.85480419	4
5		0.85221603	0.84197317	0.83187768	0.82192711	5
6		0.82539083	0.81350064	0.80180981	0.79031453	6
7		0.79941000	0.78599096	0.77282874	0.75991781	7
8		0.77424698	0.75941156	0.74489517	0.73069021	8
9		0.74987601	0.73373097	0.71797125	0.70258674	9
10		0.72627216	0.70891881	0.69202048	0.67556417	10
11		0.70341129	0.68494571	0.66700769	0.64958093	11
12		0.68127002	0.66178330	0.64289898	0.62459705	12
13		0.65982568	0.63940415	0.61966167	0.60057409	13
14		0.63905635	0.61778179	0.59726426	0.57747508	14
15		0.61894078	0.59689062	0.57567639	0.55526450	15
16		0.59945838	0.57670591	0.55486881	0.53390818	16
17		0.58058923	0.55720378	0.53481331	0.51337325	17
18		0.56231402	0.53836114	0.51548271	0.49362812	18
19		0.54461407	0.52015569	0.49685080	0.47464242	19
20		0.52747125	0.50256588	0.47889234	0.45638695	20
21		0.51086804	0.48557090	0.46158298	0.43883360	21
22		0.49478745	0.46915063	0.44489926	0.42195539	22
23		0.47921302	0.45328563	0.42881856	0.40572633	23
24		0.46412884	0.43795713	0.41331910	0.39012147	24
25		0.44951945	0.42314699	0.39837985	0.37511680	25

26	0.43536993	0.40883767	0.38398058	0.36068923	26
27	0.42166579	0.39501224	0.37010176	0.34681657	27
28	0.40839302	0.38165434	0.35672459	0.33347747	28
29	0.39553803	0.36874815	0.34383093	0.32065141	29
30	0.38308768	0.35627841	0.33140331	0.30831867	30
31	0.37102923	0.34423035	0.31942487	0.29646026	31
32	0.35935035	0.33258971	0.30787940	0.28505794	32
33	0.34803908	0.32134271	0.29675123	0.27409417	33
34	0.33708385	0.31047605	0.28602528	0.26355209	34
35	0.32647346	0.29997686	0.27568702	0.25341547	35
36	0.31619706	0.28983272	0.26572242	0.24366872	36
37	0.30624413	0.28003161	0.25611800	0.23429685	37
38	0.29660448	0.27056194	0.24686072	0.22528543	38
39	0.28726826	0.26141250	0.23793805	0.21662061	39
40	0.27822592	0.25257247	0.22933788	0.20828904	40
41	0.26946820	0.24403137	0.22104855	0.20027793	41
42	0.26098615	0.23577910	0.21305885	0.19257493	42
43	0.25277109	0.22780590	0.20535793	0.18516820	43
44	0.24481462	0.22010231	0.19793535	0.17804635	44
45	0.23710859	0.21265924	0.19078106	0.17119841	45
46	0.22964512	0.20546787	0.18388536	0.16461386	46
47	0.22241658	0.19851968	0.17723890	0.15828256	47
48	0.21541558	0.19180645	0.17083268	0.15219476	48
49	0.20863494	0.18532024	0.16465800	0.14634112	49
50	0.20206774	0.17905337	0.15870651	0.14071262	50

Tabla 3

Esta tabla contiene los valores de la expresión

$$\frac{\left(1 + \frac{i}{p}\right)^{np} - 1}{\frac{i}{p}}$$

que aparece en la ecuación del teorema 5.4 y es para el valor acumulado de np rentas vencidas, se multiplica por lo tanto, por el valor de cada renta R , tal como se observa en el cuestionamiento siguiente. ¿Cuánto dinero se acumula en una cuenta bancaria si durante 9 meses se realizan depósitos quincenales de \$1,400 y se ganan intereses del 21% anual capitalizable por quincenas?

En la cuarta columna de la tabla de la página D-25 están los factores que corresponden a $\frac{i}{p} = \frac{0.21}{24} = 0.00875$ y en su cruzamiento con el renglón de $np = 18$ está el número 19.40332615 (en recuadro) que se multiplica por el pago periódico $R = \$1,400$ para obtener el monto.

$$M = 1,400(19.40332615)$$

$$M = 27,164.65661 \text{ o } \$24,164.66$$

Se comprueba con la ecuación del teorema 5.4

$$\begin{aligned} M &= R \left[\frac{\left(1 + \frac{i}{p}\right)^{np} - 1}{\frac{i}{p}} \right] \\ M &= 1,400 \left[\frac{\left(1 + \frac{0.21}{24}\right)^{18} - 1}{\frac{0.21}{24}} \right] \\ &= 27,164.65664 \end{aligned}$$

que es prácticamente igual al anterior.

Importante

Si los pagos son anticipados, el factor que está en la tabla deberá multiplicarse por $\left(1 + \frac{i}{p}\right)$, según la ecuación 5.1. Por ejemplo, para hallar el monto que se acumula con las 18 rentas del supuesto anterior será:

$$M = 1,400 \left(1 + \frac{0.21}{24}\right) (19.40332615) \quad \text{o} \quad M = \$27,402.35$$

Tabla 3
Monto de una anualidad ordinaria
Cuando la renta es \$1.00

$$M = \frac{\left(1 + \frac{i}{p}\right)^{np} - 1}{\frac{i}{p}}$$

<i>np</i>	$\frac{i}{p}$	0.00667 ($\frac{2}{3}\%$)	0.0075 ($\frac{3}{4}\%$)	0.00875 ($\frac{7}{8}\%$)	0.01 (1%)	<i>np</i>
1		1.00000000	1.00000000	1.00000000	1.00000000	1
2		2.00666667	2.00750000	2.00875000	2.01000000	2
3		3.02004444	3.02255625	3.02632656	3.03010000	3
4		4.04017807	4.04522542	4.05280692	4.06040100	4
5		5.06711259	5.07556461	5.08826898	5.10100501	5
6		6.10089335	6.11363135	6.13279133	6.15201506	6
7		7.14156597	7.15948358	7.18645326	7.21353521	7
8		8.18917641	8.21317971	8.24933472	8.28567056	8
9		9.24377092	9.27477856	9.32151640	9.36852727	9
10		10.30539606	10.34433940	10.40307967	10.46221254	10
11		11.37409870	11.42192194	11.49410662	11.56683467	11
12		12.44992602	12.50758636	12.59468005	12.68250301	12
13		13.53292553	13.60139325	13.70488350	13.80932804	13
14		14.62314503	14.70340370	14.82480123	14.94742132	14
15		15.72063266	15.81367923	15.95451824	16.09689554	15
16		16.82543688	16.93228183	17.09412028	17.25786449	16
17		17.93760646	18.05927394	18.24369383	18.43044314	17
18		19.05719051	19.19471849	19.40332615	19.61474757	18
19		20.18423844	20.33867888	20.57310526	20.81089504	19
20		21.31880003	21.49121897	21.75311993	22.01900399	20
21		22.46092536	22.65240312	22.94345973	23.23919403	21
22		23.61066487	23.82229614	24.14421500	24.47158598	22
23		24.76806930	25.00096336	25.35547688	25.71630183	23
24		25.93318976	26.18847059	26.57733730	26.97346485	24
25		27.10607769	27.38488412	27.80988900	28.24319950	25

26	28.28678488	28.59027075	29.05322553	29.52563150	26
27	29.47536344	29.80469778	30.30744126	30.82088781	27
28	30.67186587	31.02823301	31.57263137	32.12909669	28
29	31.87634497	32.26094476	32.84889189	33.45038766	29
30	33.08885394	33.50290184	34.13631970	34.78489153	30
31	34.30944630	34.75417361	35.43501249	36.13274045	31
32	35.53817594	36.01482991	36.74506885	37.49406785	32
33	36.77509711	37.28494113	38.06658820	38.86900853	33
34	38.02026443	38.56457819	39.39967085	40.25769862	34
35	39.27373286	39.85381253	40.74441797	41.66027560	35
36	40.53555774	41.15271612	42.10093163	43.07687836	36
37	41.80579479	42.46136149	43.46931478	44.50764714	37
38	43.08450009	43.77982170	44.84967128	45.95272361	38
39	44.37173009	45.10817037	46.24210591	47.41225085	39
40	45.66754163	46.44648164	47.64672433	48.88637336	40
41	46.97199191	47.79483026	49.06363317	50.37523709	41
42	48.28513852	49.15329148	50.49293996	51.87898946	42
43	49.60703944	50.52194117	51.93475319	53.39777936	43
44	50.93775304	51.90085573	53.38918228	54.93175715	44
45	52.27733806	53.29011215	54.85633762	56.48107472	45
46	53.62585365	54.68978799	56.33633058	58.04588547	46
47	54.98335934	56.09996140	57.82927347	59.62634432	47
48	56.34991507	57.52071111	59.33527961	61.22260777	48
49	57.72558117	58.95211644	60.85446331	62.83483385	49
50	59.11041837	60.39425732	62.38693986	64.46318218	50
51	60.50448783	61.84721424	63.93282559	66.10781401	51
52	61.90785108	63.31106835	65.49223781	67.76889215	52
53	63.32057009	64.78590136	67.06529489	69.44658107	53
54	64.74270722	66.27179562	68.65211622	71.14104688	54
55	66.17432527	67.76883409	70.25282224	72.85245735	55
56	67.61548744	69.27710035	71.86753443	74.58098192	56
57	69.06625736	70.79667860	73.49637536	76.32679174	57
58	70.52669907	72.32765369	75.13946864	78.09005966	58
59	71.99687706	73.87011109	76.79693900	79.87096025	59
60	73.47685625	75.42413693	78.46891221	81.66966986	60

Tabla 3

Monto de una anualidad ordinaria

Cuando la renta es \$1.00

$$M = \frac{\left(1 + \frac{i}{p}\right)^{np} - 1}{\frac{i}{p}}$$

np	$\frac{i}{p}$	0.01125 (1 $\frac{1}{8}$ %)	0.0125 (1 $\frac{1}{4}$ %)	0.01375 (1 $\frac{3}{8}$ %)	0.015 (1 $\frac{1}{2}$ %)	np
1		1.00000000	1.00000000	1.00000000	1.00000000	1
2		2.01125000	2.01250000	2.01375000	2.01500000	2
3		3.03387656	3.03765625	3.04143906	3.04522500	3
4		4.06800767	4.07562695	4.08325885	4.09090337	4
5		5.11377276	5.12657229	5.13940366	5.15226693	5
6		6.17130270	6.19065444	6.21007046	6.22955093	6
7		7.24072986	7.26803762	7.29545893	7.32299419	7
8		8.32218807	8.35888809	8.39577149	8.43283911	8
9		9.41581269	9.46337420	9.51121335	9.55933169	9
10		10.52174058	10.58166637	10.64199253	10.70272167	10
11		11.64011016	11.71393720	11.78831993	11.86326249	11
12		12.77106140	12.86036142	12.95040933	13.04121143	12
13		13.91473584	14.02111594	14.12847745	14.23682960	13
14		15.07127662	15.19637988	15.32274402	15.45038205	14
15		16.24082848	16.38633463	16.53343175	16.68213778	15
16		17.42353780	17.59116382	17.76076644	17.93236984	16
17		18.61955260	18.81105336	19.00497697	19.20135539	17
18		19.82902257	20.04619153	20.26629541	20.48937572	18
19		21.05209907	21.29676893	21.54495697	21.79671636	19
20		22.28893519	22.56297854	22.84120013	23.12366710	20
21		23.53968571	23.84501577	24.15526663	24.47052211	21
22		24.80450717	25.14307847	25.48740155	25.83757994	22
23		26.08355788	26.45736695	26.83785332	27.22514364	23
24		27.37699790	27.78808403	28.20687380	28.63352080	24
25		28.68498913	29.13543508	29.59471832	30.06302361	25

26	30.00769526	30.49962802	31.00164569	31.51396896	26
27	31.34528183	31.88087337	32.42791832	32.98667850	27
28	32.69791625	33.27938429	33.87380220	34.48147867	28
29	34.06576781	34.69537659	35.33956698	35.99870085	29
30	35.44900769	36.12906880	36.82548602	37.53868137	30
31	36.84780903	37.58068216	38.33183646	39.10176159	31
32	38.26234688	39.05044069	39.85889921	40.68828801	32
33	39.69279829	40.53857120	41.40695907	42.29861233	33
34	41.13934227	42.04530334	42.97630476	43.93309152	34
35	42.60215987	43.57086963	44.56722895	45.59208789	35
36	44.08143417	45.11550550	46.18002835	47.27596921	36
37	45.57735030	46.67944932	47.81500374	48.98510874	37
38	47.09009549	48.26294243	49.47246004	50.71988538	38
39	48.61985906	49.86622921	51.15270636	52.48068366	39
40	50.16683248	51.48955708	52.85605608	54.26789391	40
41	51.73120934	53.13317654	54.58282685	56.08191232	41
42	53.31318545	54.79734125	56.33334072	57.92314100	42
43	54.91295879	56.48230801	58.10792415	59.79198812	43
44	56.53072957	58.18833687	59.90690811	61.68886794	44
45	58.16670028	59.91569108	61.73062809	63.61420096	45
46	59.82107566	61.66463721	63.57942423	65.56841398	46
47	61.49406276	63.43544518	65.45364131	67.55194018	47
48	63.18587097	65.22838824	67.35362888	69.56521929	48
49	64.89671201	67.04374310	69.27974128	71.60869758	49
50	66.62680002	68.88178989	71.23233772	73.68282804	50

Tabla 3

Monto de una anualidad ordinaria

Cuando la renta es \$1.00

$$M = \frac{\left(1 + \frac{i}{p}\right)^{np} - 1}{\frac{i}{p}}$$

<i>np</i>	$\frac{i}{p}$	0.01625 (1 $\frac{5}{8}$ %)	0.0175 (1 $\frac{3}{4}$ %)	0.01875 (1 $\frac{7}{8}$ %)	0.02 (2 %)	<i>np</i>
1		1.00000000	1.00000000	1.00000000	1.00000000	1
2		2.01625000	2.01750000	2.01875000	2.02000000	2
3		3.04901406	3.05280625	3.05660156	3.06040000	3
4		4.09856054	4.10623036	4.11391284	4.12160800	4
5		5.16516215	5.17808939	5.19104871	5.20404016	5
6		6.24909603	6.26870596	6.28838087	6.30812096	6
7		7.35064385	7.37840831	7.40628801	7.43428338	7
8		8.47009181	8.50753045	8.54515591	8.58296905	8
9		9.60773080	9.65641224	9.70537759	9.75462843	9
10		10.76385643	10.82539945	10.88735342	10.94972100	10
11		11.93876909	12.01484394	12.09149129	12.16871542	11
12		13.13277409	13.22510371	13.31820675	13.41208973	12
13		14.34618167	14.45654303	14.56792313	14.68033152	13
14		15.57930712	15.70953253	15.84107169	15.97393815	14
15		16.83247086	16.98444935	17.13809178	17.29341692	15
16		18.10599851	18.28167721	18.45943100	18.63928525	16
17		19.40022099	19.60160656	19.80554534	20.01207096	17
18		20.71547458	20.94463468	21.17689931	21.41231238	18
19		22.05210104	22.31116578	22.57396617	22.84055863	19
20		23.41044768	23.70161119	23.99722804	24.29736980	20
21		24.79086746	25.11638938	25.44717606	25.78331719	21
22		26.19371905	26.55592620	26.92431062	27.29898354	22
23		27.61936699	28.02065490	28.42914144	28.84496321	23
24		29.06818170	29.51101637	29.96218784	30.42186247	24
25		30.54053966	31.02745915	31.52397886	32.03029972	25

26	32.03682343	32.57043969	33.11505347	33.67090572	26
27	33.55742181	34.14042238	34.73596072	35.34432383	27
28	35.10272991	35.73787977	36.38725998	37.05121031	28
29	36.67314927	37.36329267	38.06952111	38.79223451	29
30	38.26908795	39.01715029	39.78332463	40.56807921	30
31	39.89096063	40.69995042	41.52926197	42.37944079	31
32	41.53918874	42.41219955	43.30793563	44.22702961	32
33	43.21420055	44.15441305	45.11995942	46.11157020	33
34	44.91643131	45.92711527	46.96595866	48.03380160	34
35	46.64632332	47.73083979	48.84657038	49.99447763	35
36	48.40432608	49.56612949	50.76244358	51.99436719	36
37	50.19089637	51.43353675	52.71423940	54.03425453	37
38	52.00649844	53.33362365	54.70263138	56.11493962	38
39	53.85160404	55.26696206	56.72830572	58.23723841	39
40	55.72669261	57.23413390	58.79196146	60.40198318	40
41	57.63225136	59.23573124	60.89431073	62.61002284	41
42	59.56877544	61.27235654	63.03607906	64.86222330	42
43	61.53676805	63.34462278	65.21800554	67.15946777	43
44	63.53674053	65.45315367	67.44084315	69.50265712	44
45	65.56921256	67.59858386	69.70535895	71.89271027	45
46	67.63471226	69.78155908	72.01233443	74.33056447	46
47	69.73377634	72.00273637	74.36256571	76.81717576	47
48	71.86695020	74.26278425	76.75686381	79.35351927	48
49	74.03478814	76.56238298	79.19605501	81.94058966	49
50	76.23785345	78.90222468	81.68098104	84.57940145	50

Tabla 3

Monto de una anualidad ordinaria

Cuando la renta es \$1.00

$$M = \frac{\left(1 + \frac{i}{p}\right)^{np} - 1}{\frac{i}{p}}$$

np	$\frac{i}{p}$	0.0225 (2¼%)	0.025 (2½%)	0.0275 (2¾%)	0.03 (3%)	np
1		1.00000000	1.00000000	1.00000000	1.00000000	1
2		2.02250000	2.02500000	2.02750000	2.03000000	2
3		3.06800625	3.07562500	3.08325625	3.09090000	3
4		4.13703639	4.15251562	4.16804580	4.18362700	4
5		5.23011971	5.25632852	5.28266706	5.30913581	5
6		6.34779740	6.38773673	6.42794040	6.46840988	6
7		7.49062284	7.54743015	7.60470876	7.66246218	7
8		8.65916186	8.73611590	8.81383825	8.89233605	8
9		9.85399300	9.95451880	10.05621880	10.15910613	9
10		11.07570784	11.20338177	11.33276482	11.46387931	10
11		12.32491127	12.48346631	12.64441585	12.80779569	11
12		13.60222177	13.79555297	13.99213729	14.19202956	12
13		14.90827176	15.14044179	15.37692107	15.61779045	13
14		16.24370788	16.51895284	16.79978639	17.08632416	14
15		17.60919130	17.93192666	18.26178052	18.59891389	15
16		19.00539811	19.38022483	19.76397948	20.15688130	16
17		20.43301957	20.86473045	21.30748892	21.76158774	17
18		21.89276251	22.38634871	22.89344487	23.41443537	18
19		23.38534966	23.94600743	24.52301460	25.11686844	19
20		24.91152003	25.54465761	26.19739750	26.87037449	20
21		26.47202923	27.18327405	27.91782593	28.67648572	21
22		28.06764989	28.86285590	29.68556615	30.53678030	22
23		29.69917201	30.58442730	31.50191921	32.45288370	23
24		31.36740338	32.34903798	33.36822199	34.42647022	24
25		33.07316996	34.15776393	35.28584810	36.45926432	25

26	34.81731628	36.01170803	37.25620892	38.55304225	26
27	36.60070590	37.91200073	39.28075467	40.70963352	27
28	38.42422178	39.85980075	41.36097542	42.93092252	28
29	40.28876677	41.85629577	43.49840224	45.21885020	29
30	42.19526402	43.90270316	45.69460831	47.57541571	30
31	44.14465746	46.00027074	47.95121003	50.00267818	31
32	46.13791226	48.15027751	50.26986831	52.50275852	32
33	48.17601528	50.35403445	52.65228969	55.07784128	33
34	50.25997563	52.61288531	55.10022765	57.73017652	34
35	52.39082508	54.92820744	57.61548391	60.46208181	35
36	54.56961864	57.30141263	60.19990972	63.27594427	36
37	56.79743506	59.73394794	62.85540724	66.17422259	37
38	59.07537735	62.22729664	65.58393094	69.15944927	38
39	61.40457334	64.78297906	68.38748904	72.23423275	39
40	63.78617624	67.40255354	71.26814499	75.40125973	40
41	66.22136521	70.08761737	74.22801898	78.66329753	41
42	68.71134592	72.83980781	77.26928950	82.02319645	42
43	71.25735121	75.66080300	80.39419496	85.48389234	43
44	73.86064161	78.55232308	83.60503532	89.04840911	44
45	76.52250605	81.51613116	86.90417379	92.71986139	45
46	79.24426243	84.55403443	90.29403857	96.50145723	46
47	82.02725834	87.66788530	93.77712463	100.39650095	47
48	84.87287165	90.85958243	97.35599556	104.40839598	48
49	87.78251126	94.13107199	101.03328544	108.54064785	49
50	90.75761776	97.48434879	104.81170079	112.79686729	50

Tabla 3

Monto de una anualidad ordinaria

Cuando la renta es \$1.00

$$M = \frac{\left(1 + \frac{i}{p}\right)^{np} - 1}{\frac{i}{p}}$$

<i>np</i>	$\frac{i}{p}$	0.0325 (3¼%)	0.035 (3½%)	0.0375 (3¾%)	0.04 (4%)	<i>np</i>
1		1.00000000	1.00000000	1.00000000	1.00000000	1
2		2.03250000	2.03500000	2.03750000	2.04000000	2
3		3.09855625	3.10622500	3.11390625	3.12160000	3
4		4.19925933	4.21494287	4.23067773	4.24646400	4
5		5.33573526	5.36246588	5.38932815	5.41632256	5
6		6.50914665	6.55015218	6.59142796	6.63297546	6
7		7.72069392	7.77940751	7.83860650	7.89829448	7
8		8.97161647	9.05168677	9.13255425	9.21422626	8
9		10.26319401	10.36849581	10.47502503	10.58279531	9
10		11.59674781	11.73139316	11.86783847	12.00610712	10
11		12.97364212	13.14199192	13.31288241	13.48635141	11
12		14.39528548	14.60196164	14.81211550	15.02580546	12
13		15.86313226	16.11303030	16.36756983	16.62683768	13
14		17.37868406	17.67698636	17.98135370	18.29191119	14
15		18.94349129	19.29568088	19.65565447	20.02358764	15
16		20.55915476	20.97102971	21.39274151	21.82453114	16
17		22.22732729	22.70501575	23.19496932	23.69751239	17
18		23.94971543	24.49969130	25.06478067	25.64541288	18
19		25.72808118	26.35718050	27.00470994	27.67122940	19
20		27.56424382	28.27968181	29.01738656	29.77807858	20
21		29.46008174	30.26947068	31.10553856	31.96920172	21
22		31.41753440	32.32890215	33.27199626	34.24796979	22
23		33.43860426	34.46041373	35.51969612	36.61788858	23
24		35.52535890	36.66652821	37.85168472	39.08260412	24
25		37.67993307	38.94985669	40.27112290	41.64590829	25

26	39.90453089	41.31310168	42.78129001	44.31174462	26
27	42.20142815	43.75906024	45.38558838	47.08421440	27
28	44.57297456	46.29062734	48.08754794	49.96758298	28
29	47.02159623	48.91079930	50.89083099	52.96628630	29
30	49.54979811	51.62267728	53.79923715	56.08493775	30
31	52.16016655	54.42947098	56.81670855	59.32833526	31
32	54.85537196	57.33450247	59.94733512	62.70146867	32
33	57.63817155	60.34121005	63.19536019	66.20952742	33
34	60.51141213	63.45315240	66.56518619	69.85790851	34
35	63.47803302	66.67401274	70.06138067	73.65222486	35
36	66.54106909	70.00760318	73.68868245	77.59831385	36
37	69.70365384	73.45786930	77.45200804	81.70224640	37
38	72.96902259	77.02889472	81.35645834	85.97033626	38
39	76.34051582	80.72490604	85.40732553	90.40914971	39
40	79.82158259	84.55027775	89.61010024	95.02551570	40
41	83.41578402	88.50953747	93.97047900	99.82653633	41
42	87.12679700	92.60737128	98.49437196	104.81959778	42
43	90.95841791	96.84862928	103.18791091	110.01238169	43
44	94.91456649	101.23833130	108.05745757	115.41287696	44
45	98.99928990	105.78167290	113.10961223	121.02939204	45
46	103.21676682	110.48403145	118.35122269	126.87056772	46
47	107.57131174	115.35097255	123.78939354	132.94539043	47
48	112.06737937	120.38825659	129.43149579	139.26320604	48
49	116.70956920	125.60184557	135.28517689	145.83373429	49
50	121.50263020	130.99791016	141.35837102	152.66708366	50

Tabla 4

Los valores de la expresión

$$\frac{1 - \left(1 + \frac{i}{p}\right)^{-np}}{\frac{i}{p}}$$

son los que se proporcionan en la tabla y corresponde al valor presente al inicio del plazo, de np rentas de \$1.00 cada una y por eso deben multiplicarse por R .

Por ejemplo, para encontrar el valor de un crédito C que se amortiza con 30 abonos mensuales vencidos de \$4,000, con cargos o intereses del 15% anual capitalizable por meses, dicho factor es 24.88890623 (en recuadro) que es el que se encuentra en el cruce de la tercera columna, la de $\frac{i}{p} = 0.0125$, y el renglón de $np = 30$ de la tabla de la página D-39 y por lo tanto:

$$C = 4,500(24.88890623)$$

$$C = 112,000.078 \text{ o } C = 112,000.08$$

Importante

Si los pagos son anticipados, el factor que está en la tabla deberá multiplicarse por $\left(1 + \frac{i}{p}\right)$. Por ejemplo, en el caso que se ha supuesto, el valor presente de los 30 pagos anticipados al inicio del plazo es

$$C = 4,500 \left(1 + \frac{0.30}{12}\right) (24.88890623)$$

$$C = 113,400.079 \text{ o } C = 113,400.08$$

los dos resultados pueden comprobarse respectivamente con las fórmulas:

$$C = R \left[\frac{1 - \left(1 + \frac{i}{p}\right)^{-np}}{\frac{i}{p}} \right] \quad \text{Teorema 5.2}$$

y

$$C = R \left(1 + \frac{i}{p}\right) \left[\frac{1 - \left(1 + \frac{i}{p}\right)^{-np}}{\frac{i}{p}} \right] \quad \text{Teorema 5.3}$$

Tabla 4**Valor presente de una anualidad ordinaria**

Cuando la renta es \$1.00

$$C = \frac{1 - \left(1 + \frac{i}{p}\right)^{-np}}{\frac{i}{p}}$$

np	$\frac{i}{p}$	0.00667 ($\frac{2}{3}\%$)	0.0075 ($\frac{3}{4}\%$)	0.00875 ($\frac{7}{8}\%$)	0.01 (1%)	np
1		0.99337748	0.99255583	0.99132590	0.99009901	1
2		1.98017631	1.97772291	1.97405294	1.97039506	2
3		2.96044004	2.95555624	2.94825570	2.94098521	3
4		3.93421196	3.92611041	3.91400813	3.90196555	4
5		4.90153506	4.88943961	4.87138352	4.85343124	5
6		5.86245205	5.84559763	5.82045454	5.79547647	6
7		6.81700535	6.79463785	6.76129323	6.72819453	7
8		7.76523710	7.73661325	7.69397098	7.65167775	8
9		8.70718917	8.67157642	8.61855859	8.56601758	9
10		9.64290315	9.59957958	9.53512624	9.47130453	10
11		10.57242035	10.52067452	10.44374348	10.36762825	11
12		11.49578180	11.43491267	11.34447929	11.25507747	12
13		12.41302828	12.34234508	12.23740202	12.13374007	13
14		13.32420028	13.24302242	13.12257945	13.00370304	14
15		14.22933802	14.13699495	14.00007876	13.86505252	15
16		15.12848148	15.02431261	14.86996656	14.71787378	16
17		16.02167035	15.90502492	15.73230885	15.56225127	17
18		16.90894405	16.77918107	16.58717111	16.39826858	18
19		17.79034177	17.64682984	17.43461820	17.22600850	19
20		18.66590242	18.50801969	18.27471445	18.04555297	20
21		19.53566466	19.36279870	19.10752361	18.85698313	21
22		20.39966688	20.21121459	19.93310891	19.66037934	22
23		21.25794723	21.05331473	20.75153300	20.45582113	23
24		22.11054361	21.88914614	21.56285799	21.24338726	24
25		22.95749365	22.71875547	22.36714547	22.02315570	25

26	23.79883475	23.54218905	23.16445647	22.79520366	26
27	24.63460406	24.35949286	23.95485152	23.55960759	27
28	25.46483847	25.17071251	24.73839060	24.31644316	28
29	26.28957464	25.97589331	25.51513319	25.06578530	29
30	27.10884898	26.77508021	26.28513823	25.80770822	30
31	27.92269766	27.56831783	27.04846417	26.54228537	31
32	28.73115662	28.35565045	27.80516894	27.26958947	32
33	29.53426154	29.13712203	28.55530998	27.98969255	33
34	30.33204789	29.91277621	29.29894422	28.70266589	34
35	31.12455088	30.68265629	30.03612809	29.40858009	35
36	31.91180551	31.44680525	30.76691757	30.10750504	36
37	32.69384653	32.20526576	31.49136810	30.79950994	37
38	33.47070848	32.95808016	32.20953467	31.48466330	38
39	34.24242564	33.70529048	32.92147179	32.16303298	39
40	35.00903209	34.44693844	33.62723350	32.83468611	40
41	35.77056168	35.18306545	34.32687335	33.49968922	41
42	36.52704803	35.91371260	35.02044446	34.15810814	42
43	37.27852453	36.63892070	35.70799947	34.81000806	43
44	38.02502437	37.35873022	36.38959055	35.45545352	44
45	38.76658050	38.07318136	37.06526944	36.09450844	45
46	39.50322566	38.78231401	37.73508743	36.72723608	46
47	40.23499238	39.48616775	38.39909535	37.35369909	47
48	40.96191296	40.18478189	39.05734359	37.97395949	48
49	41.68401949	40.87819542	39.70988212	38.58807871	49
50	42.40134387	41.56644707	40.35676047	39.19611753	50
51	43.11391775	42.24957525	40.99802772	39.79813617	51
52	43.82177260	42.92761812	41.63373256	40.39419423	52
53	44.52493967	43.60061351	42.26392324	40.98435072	53
54	45.22345000	44.26859902	42.88864757	41.56866408	54
55	45.91733444	44.93161193	43.50795298	42.14719216	55
56	46.60662361	45.58968926	44.12188647	42.71999224	56
57	47.29134796	46.24286776	44.73049465	43.28712102	57
58	47.97153771	46.89118388	45.33382369	43.84863468	58
59	48.64722289	47.53467382	45.93191939	44.40458879	59
60	49.31843334	48.17337352	46.52482716	44.95503841	60

Tabla 4
Valor presente de una anualidad ordinaria
Cuando la renta es \$1.00

$$C = \frac{1 - \left(1 + \frac{i}{p}\right)^{-np}}{\frac{i}{p}}$$

<i>np</i> \ $\frac{i}{p}$	0.01125 (1 $\frac{1}{8}$ %)	0.0125 (1 $\frac{1}{4}$ %)	0.01375 (1 $\frac{3}{8}$ %)	0.015 (1 $\frac{1}{2}$ %)	<i>np</i>
1	0.98887515	0.98765432	0.98643650	0.98522167	1
2	1.96674923	1.96311538	1.95949346	1.95588342	2
3	2.93374460	2.92653371	2.91935237	2.91220042	3
4	3.88998230	3.87805798	3.86619222	3.85438465	4
5	4.83558200	4.81783504	4.80018962	4.78264497	5
6	5.77066205	5.74600992	5.72151874	5.69718717	6
7	6.69533948	6.66272585	6.63035140	6.59821396	7
8	7.60973002	7.56812429	7.52685712	7.48592508	8
9	8.51394810	8.46234498	8.41120308	8.36051732	9
10	9.40810690	9.34552591	9.28355421	9.22218455	10
11	10.29231832	10.21780337	10.14407320	10.07111779	11
12	11.16669302	11.07931197	10.99292054	10.90750521	12
13	12.03134044	11.93018466	11.83025454	11.73153222	13
14	12.88636880	12.77055275	12.65623136	12.54338150	14
15	13.73188509	13.60054592	13.47100504	13.34323301	15
16	14.56799514	14.42029227	14.27472754	14.13126405	16
17	15.39480360	15.22991829	15.06754874	14.90764931	17
18	16.21241395	16.02954893	15.84961651	15.67256089	18
19	17.02092850	16.81930759	16.62107671	16.42616837	19
20	17.82044845	17.59931613	17.38207320	17.16863879	20
21	18.61107387	18.36969495	18.13274792	17.90013673	21
22	19.39290371	19.13056291	18.87324086	18.62082437	22
23	20.16603580	19.88203744	19.60369012	19.33086145	23
24	20.93056693	20.62423451	20.32423193	20.03040537	24
25	21.68659276	21.35726865	21.03500067	20.71961120	25

26	22.43420792	22.08125299	21.73612890	21.39863172	26
27	23.17350598	22.79629925	22.42774737	22.06761746	27
28	23.90457946	23.50251778	23.10998508	22.72671671	28
29	24.62751986	24.20001756	23.78296925	23.37607558	29
30	25.34241766	24.88890623	24.44682540	24.01583801	30
31	26.04936233	25.56929010	25.10167734	24.64614582	31
32	26.74844236	26.24127418	25.74764719	25.26713874	32
33	27.43974522	26.90496215	26.38485543	25.87895442	33
34	28.12335745	27.56045644	27.01342089	26.48172849	34
35	28.79936460	28.20785822	27.63346080	27.07559458	35
36	29.46785127	28.84726737	28.24509080	27.66068431	36
37	30.12890114	29.47878259	28.84842496	28.23712740	37
38	30.78259692	30.10250133	29.44357579	28.80505163	38
39	31.42902044	30.71851983	30.03065430	29.36458288	39
40	32.06825260	31.32693316	30.60976996	29.91584520	40
41	32.70037340	31.92783522	31.18103079	30.45896079	41
42	33.32546195	32.52131874	31.74454332	30.99405004	42
43	33.94359649	33.10747530	32.30041264	31.52123157	43
44	34.55485438	33.68639536	32.84874243	32.04062223	44
45	35.15931212	34.25816825	33.38963495	32.55233718	45
46	35.75704536	34.82288222	33.92319108	33.05648983	46
47	36.34812891	35.38062442	34.44951031	33.55319195	47
48	36.93263674	35.93148091	34.96869081	34.04255365	48
49	37.51064202	36.47553670	35.48082941	34.52468339	49
50	38.08221708	37.01287575	35.98602161	34.99968807	50

Tabla 4
Valor presente de una anualidad ordinaria
Cuando la renta es \$1.00

$$C = \frac{1 - \left(1 + \frac{i}{p}\right)^{-np}}{\frac{i}{p}}$$

<i>np</i>	$\frac{i}{p}$	0.01625 (1 $\frac{5}{8}$ %)	0.0175 (1 $\frac{3}{4}$ %)	0.01875 (1 $\frac{7}{8}$ %)	0.02 (2 %)	<i>np</i>
1		0.98400984	0.98280098	0.98159509	0.98039216	1
2		1.95228521	1.94869875	1.94512402	1.94156094	2
3		2.90507769	2.89798403	2.89091928	2.88388327	3
4		3.84263488	3.83094254	3.81930727	3.80772870	4
5		4.76520037	4.74785508	4.73060836	4.71345951	5
6		5.67301389	5.64899762	5.62513704	5.60143089	6
7		6.56631134	6.53464139	6.50320200	6.47199107	7
8		7.44532481	7.40505297	7.36510626	7.32548144	8
9		8.31028271	8.26049432	8.21114725	8.16223671	9
10		9.16140980	9.10122291	9.04161693	8.98258501	10
11		9.99892724	9.92749181	9.85680190	9.78684805	11
12		10.82305263	10.73954969	10.65698346	10.57534122	12
13		11.63400013	11.53764097	11.44243775	11.34837375	13
14		12.43198045	12.32200587	12.21343583	12.10624877	14
15		13.21720093	13.09288046	12.97024376	12.84926350	15
16		13.98986562	13.85049677	13.71312271	13.57770931	16
17		14.75017527	14.59508282	14.44232904	14.29187188	17
18		15.49832745	15.32686272	15.15811439	14.99203125	18
19		16.23451655	16.04605673	15.86072578	15.67846201	19
20		16.95893388	16.75288130	16.55040568	16.35143334	20
21		17.67176765	17.44754919	17.22739208	17.01120916	21
22		18.37320310	18.13026948	17.89191860	17.65804820	22
23		19.06342249	18.80124764	18.54421458	18.29220412	23
24		19.74260515	19.46068565	19.18450511	18.91392560	24
25		20.41092758	20.10878196	19.81301115	19.52345647	25

26	21.06856342	20.74573166	20.42994960	20.12103576	26
27	21.71568357	21.37172644	21.03553334	20.70689780	27
28	22.35245615	21.98695474	21.62997138	21.28127236	28
29	22.97904665	22.59160171	22.21346884	21.84438466	29
30	23.59561786	23.18584934	22.78622708	22.39645555	30
31	24.20232999	23.76987650	23.34844376	22.93770152	31
32	24.79934071	24.34385897	23.90031290	23.46833482	32
33	25.38680512	24.90796951	24.44202493	23.98856355	33
34	25.96487589	25.46237789	24.97376680	24.49859172	34
35	26.53370321	26.00725100	25.49572201	24.99861933	35
36	27.09343490	26.54275283	26.00807069	25.48884248	36
37	27.64421638	27.06904455	26.51098963	25.96945341	37
38	28.18619078	27.58628457	27.00465240	26.44064060	38
39	28.71949892	28.09462857	27.48922935	26.90258883	39
40	29.24427938	28.59422955	27.96488770	27.35547924	40
41	29.76066852	29.08523789	28.43179161	27.79948945	41
42	30.26880051	29.56780136	28.89010220	28.23479358	42
43	30.76880739	30.04206522	29.33997762	28.66156233	43
44	31.26081908	30.50817221	29.78157312	29.07996307	44
45	31.74496342	30.96626261	30.21504110	29.49015987	45
46	32.22136622	31.41647431	30.64053114	29.89231360	46
47	32.69015127	31.85894281	31.05819008	30.28658196	47
48	33.15144036	32.29380129	31.46816204	30.67311957	48
49	33.60535337	32.72118063	31.87058850	31.05207801	49
50	34.05200823	33.14120946	32.26560835	31.42360589	50

Tabla 4**Valor presente de una anualidad ordinaria**

Cuando la renta es \$1.00

$$C = \frac{1 - \left(1 + \frac{i}{p}\right)^{-np}}{\frac{i}{p}}$$

np	$\frac{i}{p}$	0.0225 ($2\frac{1}{4}\%$)	0.025 ($2\frac{1}{2}\%$)	0.0275 ($2\frac{3}{4}\%$)	0.03 (3%)	np
1		0.97799511	0.97560976	0.97323601	0.97087379	1
2		1.93446955	1.92742415	1.92042434	1.91346970	2
3		2.86989687	2.85602356	2.84226213	2.82861135	3
4		3.78474021	3.76197421	3.73942787	3.71709840	4
5		4.67945253	4.64582850	4.61258186	4.57970719	5
6		5.55447680	5.50812536	5.46236678	5.41719144	6
7		6.41024626	6.34939060	6.28940806	6.23028296	7
8		7.24718461	7.17013717	7.09431441	7.01969219	8
9		8.06570622	7.97086553	7.87767826	7.78610892	9
10		8.86621635	8.75206393	8.64007616	8.53020284	10
11		9.64911134	9.51420871	9.38206926	9.25262411	11
12		10.41477882	10.25776460	10.10420366	9.95400399	12
13		11.16359787	10.98318497	10.80701086	10.63495533	13
14		11.89593924	11.69091217	11.49100814	11.29607314	14
15		12.61216551	12.38137773	12.15669892	11.93793509	15
16		13.31263131	13.05500266	12.80457315	12.56110203	16
17		13.99768343	13.71219772	13.43510769	13.16611847	17
18		14.66766106	14.35336363	14.04876661	13.75351308	18
19		15.32289590	14.97889134	14.64600157	14.32379911	19
20		15.96371237	15.58916229	15.22725213	14.87747486	20
21		16.59042775	16.18454857	15.79294612	15.41502414	21
22		17.20335232	16.76541324	16.34349987	15.93691664	22
23		17.80278955	17.33211048	16.87931861	16.44360839	23
24		18.38903624	17.88498583	17.40079670	16.93554212	24
25		18.96238263	18.42437642	17.90831795	17.41314769	25

26	19.52311260	18.95061114	18.40225592	17.87684242	26
27	20.07150376	19.46401087	18.88297413	18.32703147	27
28	20.60782764	19.96488866	19.35082640	18.76410823	28
29	21.13234977	20.45354991	19.80615708	19.18845459	29
30	21.64532985	20.93029259	20.24930130	19.60044135	30
31	22.14702186	21.39540741	20.68058520	20.00042849	31
32	22.63767419	21.84917796	21.10032623	20.38876553	32
33	23.11752977	22.29188094	21.50883332	20.76579178	33
34	23.58682618	22.72378628	21.90640712	21.13183668	34
35	24.04579577	23.14515734	22.29334026	21.48722007	35
36	24.49466579	23.55625107	22.66991753	21.83225250	36
37	24.93365848	23.95731812	23.03641609	22.16723544	37
38	25.36299118	24.34860304	23.39310568	22.49246159	38
39	25.78287646	24.73034443	23.74024884	22.80821513	39
40	26.19352221	25.10277505	24.07810106	23.11477197	40
41	26.59513174	25.46612200	24.40691101	23.41239997	41
42	26.98790390	25.82060683	24.72692069	23.70135920	42
43	27.37203316	26.16644569	25.03836563	23.98190213	43
44	27.74770969	26.50384945	25.34147507	24.25427392	44
45	28.11511950	26.83302386	25.63647209	24.51871254	45
46	28.47444450	27.15416962	25.92357381	24.77544907	46
47	28.82586259	27.46748255	26.20299154	25.02470783	47
48	29.16954777	27.77315371	26.47493094	25.26670664	48
49	29.50567019	28.07136947	26.73959215	25.50165693	49
50	29.83439627	28.36231168	26.99716998	25.72976401	50

Tabla 4
Valor presente de una anualidad ordinaria
Cuando la renta es \$1.00

$$C = \frac{1 - \left(1 + \frac{i}{p}\right)^{-np}}{\frac{i}{p}}$$

<i>np</i>	$\frac{i}{p}$	0.0325 (3¼%)	0.035 (3½%)	0.0375 (3¾%)	0.04 (4%)	<i>np</i>
1		0.96852300	0.96618357	0.96385542	0.96153846	1
2		1.90655981	1.89969428	1.89287270	1.88609467	2
3		2.81507003	2.80163698	2.78831103	2.77509103	3
4		3.69498308	3.67307921	3.65138413	3.62989522	4
5		4.54719911	4.51505238	4.48326181	4.45182233	5
6		5.37258994	5.32855302	5.28507162	5.24213686	6
7		6.17199994	6.11454398	6.05790036	6.00205467	7
8		6.94624692	6.87395554	6.80279553	6.73274487	8
9		7.69612292	7.60768651	7.52076677	7.43533161	9
10		8.42239508	8.31660532	8.21278725	8.11089578	10
11		9.12580637	9.00155104	8.87979494	8.76047671	11
12		9.80707639	9.66333433	9.52269392	9.38507376	12
13		10.46690207	10.30273849	10.14235558	9.98564785	13
14		11.10595842	10.92052028	10.73961984	10.56312293	14
15		11.72489920	11.51741090	11.31529623	11.11838743	15
16		12.32435758	12.09411681	11.87016504	11.65229561	16
17		12.90494681	12.65132059	12.40497835	12.16566885	17
18		13.46726083	13.18968173	12.92046106	12.65929697	18
19		14.01187490	13.70983742	13.41731187	13.13393940	19
20		14.53934615	14.21240330	13.89620421	13.59032634	20
21		15.05021419	14.69797420	14.35778719	14.02915995	21
22		15.54500163	15.16712484	14.80268645	14.45111533	22
23		16.02421466	15.62041047	15.23150501	14.85684167	23
24		16.48834349	16.05836760	15.64482411	15.24696314	24
25		16.93786295	16.48151459	16.04320396	15.62207994	25

26	17.37323288	16.89035226	16.42718454	15.98276918	26
27	17.79489867	17.28536451	16.79728630	16.32958575	27
28	18.20329169	17.66701885	17.15401089	16.66306322	28
29	18.59882973	18.03576700	17.49784183	16.98371463	29
30	18.98191741	18.39204541	17.82924513	17.29203330	30
31	19.35294664	18.73627576	18.14867001	17.58849356	31
32	19.71229699	19.06886547	18.45654941	17.87355150	32
33	20.06033607	19.39020818	18.75330063	18.14764567	33
34	20.39741992	19.70068423	19.03932591	18.41119776	34
35	20.72389339	20.00066110	19.31501293	18.66461323	35
36	21.04009045	20.29049381	19.58073535	18.90828195	36
37	21.34633457	20.57052542	19.83685335	19.14257880	37
38	21.64293905	20.84108736	20.08371407	19.36786423	38
39	21.93020732	21.10249987	20.32165212	19.58448484	39
40	22.20843324	21.35507234	20.55098999	19.79277388	40
41	22.47790144	21.59910371	20.77203855	19.99305181	41
42	22.73888759	21.83488281	20.98509739	20.18562674	42
43	22.99165869	22.06268870	21.19045532	20.37079494	43
44	23.23647330	22.28279102	21.38839067	20.54884129	44
45	23.47358189	22.49545026	21.57917173	20.72003970	45
46	23.70322701	22.70091813	21.76305709	20.88465356	46
47	23.92564360	22.89943780	21.94029599	21.04293612	47
48	24.14105917	23.09124425	22.11112866	21.19513088	48
49	24.34969412	23.27656450	22.27578666	21.34147200	49
50	24.55176185	23.45561787	22.43449317	21.48218462	50

Tabla 5

La última tabla es útil para encontrar la tasa efectiva equivalente a alguna tasa nominal específica y viceversa. En la primera y última columnas están los valores más usuales de p : 2, 3, 4, 6, 12 y 24, la frecuencia de conversión. En el primer renglón se encuentran algunos valores de e , la tasa efectiva, y en el interior de la tabla están los de la tasa nominal equivalente i , capitalizable en p periodos por año.

Por ejemplo, para encontrar la tasa nominal mensual equivalente al 16.5% efectivo, se busca el número que está en el renglón que corresponde a $p = 12$ de la cuarta columna en la tabla de la página D-50. Ahí se encuentra el número 0.15369704 (en recuadro) lo cual significa que el 15.369704% capitalizable por meses es igual de productivo que el 16.5% efectivo, es decir, anual capitalizable por años.

Para comprobar este resultado, recuerde que para obtener tasas equivalentes, se igualan los montos y se despeja la tasa, es decir:

Si $M_1 = C \left(1 + \frac{i}{12}\right)^{12}$ y $M_2 = C \left(1 + \frac{0.165}{1}\right)^1$, donde C es cualquier capital, al igualarlos queda;

$$C \left(1 + \frac{i}{12}\right)^{12} = C (1 + 0.165)$$

$$1 + \frac{i}{12} = \sqrt[12]{1.165}$$

$$i = (1.0120808087 - 1)12$$

$$i = 0.153697044 \text{ o } 15.3697044\%$$

que es prácticamente igual al de la tabla.

Tabla 5

Tasa nominal i compuesta en p periodos por año, equivalente a la tasa efectiva e indicada

$$e = \left(1 + \frac{i}{p}\right)^p - 1 \text{ o } i = \left[(1 + e)^{\frac{1}{p}} - 1\right]$$

<div><div>e</div><div>p</div></div>	0.0025 $\frac{1}{4}\%$	0.0033 $\frac{1}{3}\%$	0.00417 $\frac{5}{12}\%$	0.00458 $\frac{11}{24}\%$	0.005 $\frac{1}{2}\%$	p
2	$i = 0.00249844$	0.00333056	0.00416234	0.00457809	0.00499377	2
3	0.00249792	0.00332964	0.00416089	0.00457635	0.00499169	3
4	0.00249766	0.00332917	0.00416017	0.00457548	0.00499065	4
6	0.00249740	0.00332871	0.00415945	0.00457460	0.00498962	6
12	0.00249714	0.00332825	0.00415873	0.00457373	0.00498858	12
24	0.00249701	0.00332803	0.00415836	0.00457630	0.00498806	24
<div><div>e</div><div>p</div></div>	0.005417 $\frac{13}{24}\%$	0.00583 $\frac{7}{12}\%$	$\frac{5}{8}\%$	0.00667 $\frac{2}{3}\%$	0.0075 $\frac{3}{4}\%$	p
2	$i = 0.00540935$	0.00582485	0.00624026	0.00665559	0.00748599	2
3	0.00540692	0.00582203	0.00623702	0.00665191	0.00748133	3
4	0.00540570	0.00582062	0.00623540	0.00665006	0.00747900	4
6	0.00540448	0.00581921	0.00623379	0.00664822	0.00747667	6
12	0.00540327	0.00581780	0.00623217	0.00664638	0.00747434	12
24	0.00540266	0.00581710	0.00623136	0.00664546	0.00747317	24
<div><div>e</div><div>p</div></div>	0.00875 $\frac{7}{8}\%$	0.01 1%	0.01125 $1\frac{1}{8}\%$	0.0125 $1\frac{1}{4}\%$	0.01375 $1\frac{3}{8}\%$	p
2	$i = 0.00873094$	0.00997512	0.01121854	0.01246118	0.01370306	2
3	0.00872460	0.00996685	0.01120807	0.01244828	0.01368746	3
4	0.00872143	0.00996272	0.01120285	0.01244183	0.01367966	4
6	0.00871827	0.00995859	0.01119763	0.01243539	0.01367186	6
12	0.00871510	0.00995446	0.01119241	0.01242895	0.01366410	12
24	0.00871351	0.00995239	0.01118981	0.01242574	0.01366022	24

$p \backslash e$	0.015 $1\frac{1}{2}\%$	0.01625 $1\frac{5}{8}\%$	0.0175 $1\frac{3}{4}\%$	0.01875 $1\frac{7}{8}\%$	0.02 2%	p
2	$i = 0.01494417$	0.01618452	0.01742410	0.01866292	0.01990099	2
3	0.01492562	0.01616277	0.01739890	0.01863402	0.01986813	3
4	0.01491636	0.01617182	0.01738631	0.01861959	0.01985173	4
6	0.01490710	0.01614105	0.01737374	0.01860517	0.01983534	6
12	0.01489785	0.01613021	0.01736119	0.01859077	0.01981898	12
24	0.01489322	0.01612481	0.01735490	0.01858358	0.01981080	24
$p \backslash e$	0.0225 $2\frac{1}{4}\%$	0.025 $2\frac{1}{2}\%$	0.0275 $2\frac{3}{4}\%$	0.03 3%	0.0325 $3\frac{1}{4}\%$	p
2	$i = 0.02237484$	0.02484567	0.02731349	0.02977831	0.03224014	2
3	0.02233333	0.02479451	0.02725170	0.02970490	0.03215414	3
4	0.02231261	0.02476899	0.02722087	0.02966829	0.03211125	4
6	0.02229192	0.02474349	0.02719009	0.02963173	0.03206844	6
12	0.02227125	0.02471804	0.02715936	0.02959524	0.03202571	12
24	0.02226094	0.02470531	0.02714400	0.02957702	0.03200436	24
$p \backslash e$	0.035 $3\frac{1}{2}\%$	0.0375 $3\frac{3}{4}\%$	0.04 4%	0.045 $4\frac{1}{2}\%$	0.05 5%	p
2	$i = 0.03469899$	0.03715488	0.03960781	0.04450483	0.04939015	2
3	0.03459943	0.03704078	0.03947821	0.04434138	0.04918907	3
4	0.03454978	0.03698390	0.03941363	0.04425996	0.04908894	4
6	0.03450024	0.03692714	0.03934918	0.04417874	0.04898908	6
12	0.03445078	0.03687050	0.03928488	0.04409771	0.04888949	12
24	0.03442610	0.03684223	0.03925277	0.04405728	0.04883978	24

Tabla 5

Tasa nominal i compuesta en p periodos por año, equivalente a la tasa efectiva e indicada

$$e = \left(1 + \frac{i}{p}\right)^p - 1 \text{ o } i = \left[(1 + e)^{\frac{1}{p}} - 1\right]$$

$p \backslash e$	0.055 5½%	0.06 6%	0.065 6½%	0.07 7%	0.075 7½%	p
2	$i = 0.05426386$	0.05912603	0.06397674	0.06881609	0.07364414	2
3	0.05402139	0.05883847	0.06364042	0.06842737	0.07319942	3
4	0.05390070	0.05869538	0.06347314	0.06823410	0.07297840	4
6	0.05378036	0.05855277	0.06330644	0.06804156	0.07275827	6
12	0.05366039	0.05841061	0.06314033	0.06784974	0.072539030	12
24	0.05360054	0.05833970	0.06305750	0.06775411	0.07242974	24
$p \backslash e$	0.08 8%	0.085 8½%	0.09 9%	0.095 9½%	0.10 10%	p
2	$i = 0.07846097$	0.08326667	0.08806130	0.09284495	0.09761770	2
3	0.07795670	0.08269933	0.08742740	0.09214104	0.09684035	3
4	0.07770619	0.08241758	0.08711272	0.09179174	0.09645476	4
6	0.07745674	0.08213712	0.08679955	0.09144420	0.09607121	6
12	0.07720836	0.08185792	0.08648788	0.09109841	0.09568968	12
24	0.07708457	0.08171880	0.08633261	0.09092616	0.09549967	24
$p \backslash e$	0.105 10½%	0.11 11%	0.115 11½%	0.12 12%	0.125 12½%	p
2	$i = 0.10237960$	0.10713075	0.11187121	0.11660105	0.12132034	2
3	0.10152544	0.10619642	0.11085339	0.11549646	0.12012574	3
4	0.10110190	0.10573331	0.11034909	0.11494938	0.11953429	4
6	0.10068072	0.10527289	0.10984784	0.11440574	0.11894671	6
12	0.10026187	0.10481513	0.10934962	0.11386552	0.11836297	12
24	0.10005331	0.10458725	0.10910165	0.11359668	0.11807254	24

$p \backslash e$	0.13 13%	0.135 13½%	0.14 14%	0.145 14½%	0.15 15%	p
2	$i = 0.12602916$	0.13072758	0.13541565	0.14009346	0.14476106	2
3	0.12474131	0.12934329	0.13393178	0.13850687	0.14306866	3
4	0.12470394	0.12865845	0.13319794	0.13772252	0.14223230	4
6	0.12347089	0.12797842	0.13246943	0.13694407	0.14140244	6
12	0.12284213	0.12730316	0.13174622	0.13617145	0.14057900	12
24	0.12252936	0.12696732	0.13138658	0.13578732	0.14016967	24
$p \backslash e$	0.155 15½%	0.16 16%	0.165 16½%	0.17 17%	0.175 17½%	p
2	$i = 0.14941853$	0.15406592	0.15870331	0.16333077	0.16794834	2
3	0.14761725	0.15215272	0.15667519	0.16118473	0.16568144	3
4	0.14672741	0.15120794	0.15567402	0.16012573	0.16456321	4
6	0.14584469	0.15027094	0.15468133	0.15907597	0.16345498	6
12	0.14496902	0.14934166	0.15369704	0.15803533	0.16235666	12
24	0.14453381	0.14887987	0.15320803	0.15751841	0.16181119	24
$p \backslash e$	0.18 18%	0.185 18½%	0.19 19%	0.195 19½%	0.20 20%	p
2	$i = 0.17255610$	0.17715411	0.18174242	0.18632111	0.19089023	2
3	0.17016542	0.17463674	0.17909551	0.18354180	0.18797571	3
4	0.16898654	0.17339584	0.17779121	0.18217215	0.18654056	4
6	0.16781849	0.17216663	0.17649950	0.18081723	0.18511993	6
12	0.10666116	0.17094898	0.17522024	0.17947508	0.18371364	12
24	0.16608648	0.17034446	0.17458524	0.17880900	0.18301584	24

Tabla 6

Esta tabla, conocida como tabla de mortalidad, es útil principalmente para las compañías aseguradoras cuando calculan las primas para un seguro de vida o de muerte de sus asegurados.

En la primera y la última columnas están los valores de la edad x de un grupo inicial de 10 millones de personas, comenzando con los 12 años de edad, hasta la última fila, donde $x = 99$.

La segunda columna contiene los valores de l_x y representa el número de personas, de la muestra original de los 10 millones, que se mantuvieron con vida hasta la edad x , habiendo tenido 12 años de edad.

En la tercera columna está d_x , que representa el número de personas que de la muestra original fallecieron a la edad x , esto es, que cumplieron los x años, pero no llegaron a los $x + 1$ años de edad. La cuarta columna contiene los valores de P_x y esto es la probabilidad de cumplir un año más de vida, teniendo x años de edad. Esta probabilidad está dada por el cociente $P_x = \frac{l_{x+1}}{l_x}$. La siguiente columna,

la quinta, tiene valores de q_x , para la probabilidad de fallecer antes de cumplir los $x + 1$ años, teniendo x años de edad. Están dados por la diferencia de P_x y el 100%, es decir, $q_x = 1 - P_x$.

De la sexta a la undécima columnas están los valores de D_x y N_x para tasas de interés técnico del 4, 6.5 y 8%, respectivamente, se llaman *símbolos de conmutación*, que no representa concepto alguno, sino que son relaciones matemáticas que al combinarse con factores financieros facilitan los cálculos y uso de fórmulas actuariales.

Ejemplo de tabla de mortalidad para México

Edad x	I_x	d_x	P_x	q_x	D_x 4.0%	N_x 4.0%	D_x 6.5%	N_x 6.5%	D_x 8%	N_x 8%	Edad x
12	10'000,000.00	11,200.00	0.99888	0.00112	6'245,970.50	143'615,765.33	4'696,828.54	73'587,378.70	3'971,137.59	52'093,974.20	12
13	9'988,800.00	11,387.00	0.99886	0.00114	5'999,014.43	137'369,794.83	4'405,228.26	68'890,550.15	3'672,861.03	48'122,836.61	13
14	9'977,413.00	11,574.00	0.99884	0.00116	5'761,707.40	131'370,780.40	4'131,649.20	64'485,321.90	3'396,920.42	44'449,975.58	14
15	9'965,839.00	11,859.00	0.99881	0.00119	5'533,676.64	125'609,073.00	3'874,982.54	60'353,672.69	3'141,648.08	41'053,055.16	15
16	9'953,980.00	12,045.00	0.99879	0.00121	5'314,511.30	120'075,396.37	3'634,151.59	56'478,690.15	2'905,471.88	37'911,407.08	16
17	9'941,935.00	12,328.00	0.99876	0.00124	5'103,923.44	114'760,885.06	3'408,219.74	52'844,538.56	2'686,996.35	35'005,935.20	17
18	9'929,607.00	12,610.00	0.99873	0.00127	4'901,533.25	109'656,961.62	3'196,238.07	49'436,318.82	2'484,874.51	32'318,938.86	18
19	9'916,997.00	12,892.00	0.99870	0.00130	4'707,027.50	104'755,428.38	2'997,351.21	46'240,080.75	2'297,887.84	29'834,064.35	19
20	9'904,105.00	13,272.00	0.99866	0.00134	4'520,104.24	100'048,400.88	2'810,755.57	43'242,729.54	2'124,907.97	27'536,176.50	20
21	9'890,833.00	13,649.00	0.99862	0.00138	4'340,429.87	95'528,296.65	2'635,670.44	40'431,973.96	1'964,870.82	25'411,268.53	21
22	9'887,184.00	14,026.00	0.99858	0.00142	4'167,790.99	91'187,866.77	2'471,392.78	37'796,303.52	1'816,814.23	23'446,397.70	22
23	9'863,158.00	14,499.00	0.99853	0.00147	4'001,742.93	87'020,135.78	2'317,261.31	35'324,910.74	1'679,846.56	21'629,583.47	23
24	9'848,659.00	14,970.00	0.99848	0.00152	3'842,173.37	83'018,392.85	2'172,633.71	33'007,649.43	1'553,127.00	19'949,736.91	24
25	9'833,689.00	15,439.00	0.99843	0.00157	3'688,781.97	79'176,219.48	2'036,930.80	30'835,015.72	1'435,894.67	18'396,609.92	25
26	9'818,250.00	16,101.00	0.99836	0.00164	3'541,337.06	75'487,437.51	1'909,608.28	28'798,084.92	1'327,444.72	16'960,715.25	26
27	9'802,149.00	16,664.00	0.99830	0.00170	3'399,547.70	71'946,100.45	1'790,118.95	26'888,476.66	1'227,099.85	15'633,270.53	27
28	9'785,485.00	17,320.00	0.99823	0.00177	3'263,238.79	68'546,552.75	1'678,005.34	25'098,357.71	1'134,271.98	14'406,170.69	28
29	9'768,165.00	18,072.00	0.99815	0.00185	3'132,175.93	65'283,313.96	1'572,803.12	23'420,352.37	1'048,392.92	13'271,898.71	29
30	9'750,093.00	18,915.00	0.99806	0.00194	3'006,135.69	62'151,138.03	1'474,078.20	21'847,549.26	968,938.23	12'223,505.80	30
31	9'731,178.00	19,754.00	0.99797	0.00203	2'884,907.54	59'145,002.34	1'381,425.84	20'373,471.05	895,424.55	11'254,567.56	31
32	9'711,424.00	20,782.00	0.99786	0.00214	2'768,318.52	58'260,094.81	1'294,480.36	18'992,045.21	827,413.76	10'359,143.01	32
33	9'690,642.00	21,804.00	0.99775	0.00225	2'656,148.51	53'491,776.29	1'212,873.46	17'697,564.85	764,484.38	9'531,729.25	33
34	9'668,838.00	22,916.00	0.99763	0.00237	2'548,242.46	50'835,627.76	1'136,285.90	16'484,691.39	706,263.23	8'767,244.87	34
35	9'645,922.00	24,114.00	0.99750	0.00250	2'444,425.86	48'287,385.32	1'064,406.39	15'348,405.48	652,397.52	8'060,981.63	35
36	9'621,808.00	25,498.00	0.99735	0.00265	2'344,533.66	45'842,959.46	996,944.10	14'283,999.09	602,561.65	7'408,584.11	36
37	9'596,310.00	26,966.00	0.99719	0.00281	2'248,385.18	43'498,425.80	933,617.07	13'287,054.99	556,448.94	6'806,022.48	37
38	9'569,344.00	28,516.00	0.99702	0.00298	2'155,833.78	41'250,040.62	874,172.36	12'353,437.93	513,782.68	6'249,573.52	38
39	9'540,828.00	30,245.00	0.99683	0.00317	2'066,739.95	39'094,206.83	818,373.13	11'479,265.56	474,307.07	5'735,790.84	39
40	9'510,583.00	32,146.00	0.99662	0.00338	1'980,950.25	37'027,466.88	765,989.52	10'660,892.43	437,781.01	5'261,483.77	40
41	9'478,437.00	34,122.00	0.99640	0.00360	1'898,321.72	35'046,516.64	716,807.94	9'894,902.91	403,982.69	4'823,702.76	41
42	9'444,315.00	36,266.00	0.99616	0.00384	1'818,738.30	33'148,194.92	670,636.12	9'178,094.97	372,711.45	4'419,720.07	42
43	9'408,049.00	38,667.00	0.99589	0.00411	1'742,071.52	31'329,456.61	627,287.22	8'507,458.85	343,776.00	4'047,008.82	43
44	9'369,382.00	41,226.00	0.99560	0.00440	1'668,184.25	29'587,385.09	586,581.29	7'880,171.64	317,004.70	3'703,230.82	44
45	9'328,156.00	44,028.00	0.99528	0.00472	1'596,965.49	27'919,200.84	548,357.07	7'293,590.35	292,231.35	3'386,225.92	45
46	9'284,128.00	47,071.00	0.99493	0.00507	1'528,296.12	26'322,235.35	512,459.04	6'745,233.27	269,307.45	3'093,994.57	46
47	9'237,057.00	50,342.00	0.99455	0.00545	1'462,064.99	24'793,939.23	478,742.58	6'232,774.23	248,094.49	2'824,687.12	47
48	9'186,715.00	53,834.00	0.99414	0.00586	1'398,169.93	23'331,874.24	447,073.65	5'754,031.65	228,465.18	2'576,592.63	48
49	9'132,881.00	57,629.00	0.99369	0.00631	1'336,516.03	21'933,704.31	417,327.51	5'306,958.00	210,302.18	2'348,127.47	49

Edad x	I_x	d_x	P_x	q_x	D_x 4.0%	N_x 4.0%	D_x 6.5%	N_x 6.5%	D_x 8%	N_x 8%	Edad x
50	9'075,252.00	61,711.00	0.99320	0.00680	1'277,002.44	20'597,188.28	389,384.18	4'889,630.49	193,495.52	2'137,825.29	50
51	9'013,541.00	66,070.00	0.99267	0.00733	1'219,537.43	19'320,185.84	363,132.77	4'500,246.31	177,944.23	1'944,329.77	51
52	8'947,471.00	70,774.00	0.99209	0.00791	1'164,036.65	18'100,648.40	338,470.40	4'137,113.54	163,555.45	1'766,385.54	52
53	8'876,697.00	75,896.00	0.99145	0.00855	1'110,412.68	16'936,611.75	315,298.70	3'798,643.14	150,242.35	1'602,830.09	53
54	8'800,801.00	81,319.00	0.99076	0.00924	1'058,575.60	15'826,129.07	293,523.84	3'483,344.43	137,923.86	1'452,587.74	54
55	8'719,482.00	87,195.00	0.99000	0.01000	1'008,456.16	14'767,623.47	273,062.62	3'189,820.59	126,527.27	1'314,663.88	55
56	8'632,287.00	93,401.00	0.98918	0.01082	959,972.67	13'759,167.31	253,832.86	2'916,757.97	115,983.33	1'188,136.61	56
57	8'538,886.00	100,076.00	0.98828	0.01172	913,063.28	12'799,194.64	235,761.87	2'662,925.12	106,229.99	1'072,153.29	57
58	8'438,810.00	107,088.00	0.98731	0.01269	867,655.91	11'886,131.36	218,778.16	2'427,163.24	97,208.31	965,923.29	58
59	8'331,722.00	114,645.00	0.98624	0.01376	823,697.51	11'018,475.45	202,818.66	2'208,385.09	88,865.50	868,714.98	59
60	8'217,077.00	122,599.00	0.98508	0.01492	781,118.63	10'194,777.94	187,819.59	2'005,566.43	81,150.65	779,849.48	60
61	8'094,478.00	131,049.00	0.98381	0.01619	739,869.54	9'413,659.31	173,725.18	1'817,746.83	74,018.41	698,698.83	61
62	7'963,429.00	139,679.00	0.98246	0.01754	699,895.30	8'673,789.76	160,481.30	1'644,021.65	67,425.98	624,680.42	62
63	7'823,750.00	149,199.00	0.98093	0.01907	661,172.21	7'973,894.47	148,043.61	1'483,540.35	61,336.41	557,254.44	63
64	7'674,551.00	154,028.00	0.97993	0.02007	623,618.89	7'312,722.26	136,357.20	1'335,496.74	55,709.93	495,918.02	64
65	7'520,523.00	169,136.00	0.97751	0.02249	587,598.92	6'689,103.37	125,465.27	1'199,139.54	50,548.00	440,208.09	65
66	7'351,387.00	179,595.00	0.97557	0.02443	552,292.18	6'101,504.45	115,158.28	1'073,674.27	45,751.09	389,660.10	66
67	7'171,792.00	190,339.00	0.97346	0.02654	518,076.57	5'549,212.27	105,488.22	958,515.99	41,327.21	343,909.01	67
68	6'981,453.00	201,345.00	0.97116	0.02884	484,929.66	5'031,135.70	96,421.19	853,027.77	37,250.36	302,581.80	68
69	6'780,108.00	212,489.00	0.96866	0.03134	452,831.05	4'546,206.04	87,925.26	756,606.58	33,496.35	265,331.44	69
70	6'567,619.00	223,693.00	0.96594	0.03406	421,768.56	4'093,374.99	79,971.53	668,681.31	30,043.12	231,835.09	70
71	6'343,926.00	234,852.00	0.96298	0.03702	391,733.78	3'671,606.43	72,533.05	588,709.78	26,870.24	201,791.97	71
72	8'109,074.00	245,829.00	0.95976	0.04024	362,722.88	3'279,872.68	65,584.86	516,176.73	23,958.80	174,921.74	72
73	5'863,245.00	256,517.00	0.95625	0.04375	334,737.43	2'917,149.77	59,103.97	450,591.86	21,291.38	150,962.94	73
74	5'606,728.00	266,600.00	0.95245	0.04755	307,781.41	2'582,412.35	53,068.71	391,487.89	18,851.75	129,671.56	74
75	5'340,128.00	276,031.00	0.94831	0.05169	281,871.53	2'274,630.94	47,460.37	338,419.18	16,625.32	110,819.81	75
76	5'064,097.00	284,501.00	0.94382	0.05618	257,020.76	1'992,759.41	42,260.23	290,958.82	14,598.11	94,194.49	76
77	4'779,596.00	291,795.00	0.93895	0.06105	233,251.29	1'735,738.63	37,451.69	248,698.59	12,757.40	79,596.38	77
78	4'487,801.00	297,720.00	0.93366	0.06634	210,587.76	1'502,487.34	33,019.02	211,246.90	11,091.25	66,838.99	78
79	4'190,081.00	302,021.00	0.92792	0.07208	189,055.19	1'291,899.58	28,946.99	178,227.88	9,588.39	55,747.73	79
80	3'888,060.00	304,397.00	0.92171	0.07829	168,660.86	1'102,844.38	25,221.12	149,280.89	8,238.20	46,159.34	80
81	3'583,663.00	304,718.00	0.91497	0.08503	149,495.00	934,163.52	21,827.75	124,059.78	7,030.77	37,921.14	81
82	3'278,945.00	302,713.00	0.90768	0.09232	131,522.58	784,668.52	18,752.81	102,232.03	5,956.43	30,890.37	82
83	2'976,232.00	298,248.00	0.89979	0.10021	114,788.83	653,145.94	15,982.67	83,479.22	5,008.05	24,933.93	83
84	2'677,984.00	291,204.00	0.89126	0.10874	99,313.31	538,357.11	13,503.33	67,496.55	4,170.73	19,927.88	84
85	2'386,780.00	281,544.00	0.88204	0.11796	85,109.60	439,043.80	11,300.45	53,993.22	3,441.86	15,757.15	85
86	2'105,236.00	269,260.00	0.87210	0.12790	72,182.78	353,934.20	9,359.11	42,692.77	2,810.98	12,315.29	86
87	1'835,976.00	254,503.00	0.86138	0.13862	60,529.42	281,751.42	7,663.92	33,333.66	2,269.87	9,504.31	87
88	1'581,473.00	237,490.00	0.84983	0.15017	50,133.49	221,222.00	6,196.64	25,669.74	1,810.39	7,234.44	88

Edad x	I_x	d_x	P_x	q_x	D_x 4.0%	N_x 4.0%	D_x 6.5%	N_x 6.5%	D_x 8%	N_x 8%	Edad x
89	1'143,983.00	218,518.00	0.83741	0.16259	40,966.28	171,088.51	4,946.28	19,471.10	1,424.58	5,424.06	89
90	1'125,465.00	198,003.00	0.82407	0.17593	32,986.14	130,122.23	3,889.26	14,524.82	1,104.57	3,999.50	90
91	927,462.00	196,450.00	0.80975	0.19025	26,137.39	97,138.09	3,009.41	10,635.56	842.82	2,894.93	91
92	751,012.00	154,393.00	0.79442	0.20558	20,350.71	70,998.70	2,288.14	7,626.14	631.92	2,052.11	92
93	596,619.00	132,437.00	0.77802	0.22198	15,545.21	50,647.98	1,706.50	5,338.00	464.82	1,420.19	93
94	464,182.00	111,163.00	0.76052	0.23948	11,629.32	35,102.78	1,246.88	3,631.20	334.85	955.37	94
95	353,019.00	91,160.00	0.74177	0.25823	8,504.15	23,473.45	890.40	2,384.32	235.80	620.51	95
96	261,859.00	72,758.00	0.72215	0.27785	6,065.50	14,969.31	620.16	1,493.91	161.95	384.72	96
97	189,101.00	56,532.00	0.70105	0.29895	4,211.72	8,903.80	420.52	873.75	108.29	222.76	97
98	132,569.00	42,582.00	0.67879	0.32121	2,839.06	4,692.08	276.81	453.24	70.29	114.47	98
99	89,987.00	89,987.00	0.00000	1.00000	1,853.02	1,853.02	176.43	176.43	44.18	44.18	99