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**CHART OF ACCOUNTS
FOR ENTIRE EXAM**

ASSETS

Current

Accounts receivable

Gross accounts receivable
Allowance for doubtful accounts

Manufacturing inventories (for question 1 only)

Materials and parts
Work in process
Finished goods

Retail LIFO inventories (for question 2 only)

FIFO inventories
LIFO reserve (contra asset to FIFO inventories)

Other current assets

Cash
Employee advances
Prepaid expenses: advertising
Supplier advances

Noncurrent

Long-term receivables, trade and other
Investments in unconsolidated affiliated companies

Property, plant, and equipment accounts

PP&E historical cost
PP&E accumulated depreciation
PP&E accumulated impairments

Intangibles

Intangibles historical cost
Intangibles accumulated amortization
Intangibles accumulated impairments

Goodwill

Goodwill historical cost
Goodwill accumulated impairments

LIABILITIES

Current

Accrued employee compensation
Accrued liabilities: advertising
Accrued liabilities: other
Workforce reduction liability
Lease obligation termination liability
Accounts payable

Noncurrent

Long-term debt
<i>Bonds</i>
Bond face value
Bond unamortized discount
Bond unamortized premium
Other long-term liabilities

OWNERS' EQUITY

Permanent

Common stock
Retained earnings

Net income

Advertising expense
Amortization expense
Depreciation expense
Finance (interest) expense
Goodwill impairment
LIFO Cost of goods sold
Other expense
Provision for doubtful accounts
Special charges and restructuring costs

FIFO computations

Carly's Candies FIFO Perpetual		Units	Input Costs Layers					Total
			\$40 Layer	\$45 Layer	\$50 Layer	\$55 Layer	\$60 Layer	
2014	January 1	0						= \$0
	Purchase on January 1	25	@ \$40					= \$1,000
	Sales for January 1 - June 30	(17)	@ \$40					= (\$680)
	Purchase on July 1	45		@ \$45				= \$2,025
	Sales for July 1 - December 31	(35)	@ \$40	@ \$45				= (\$1,535)
	Year-end balance	18		@ \$45				= \$810
2015	Purchase on January 1	47			@ \$50			= \$2,350
	Sales for January 1 - June 30	(46)		@ \$45	@ \$50			= (\$2,210)
	Purchase on July 1	65			@ \$55			= \$3,575
	Sales for July 1 - December 31	(60)			@ \$50	@ \$55		= (\$3,205)
	Year-end balance	24			@ \$55			= \$1,320
2016	Purchase on January 1	80				@ \$60		= \$4,800
	Sales for January 1 - June 30	(90)			@ \$55	@ \$60		= (\$5,280)
	Purchase on July 1	112					112 @ \$65	= \$7,280
	Sales for July 1 - December 31	(97)					(83) @ \$65	= (\$6,235)
	Pre-impairment balance	29					29 @ \$65	= \$1,885
	LCM impairment: market = \$50	29					29 @ (\$15)	= (\$435)
	Year-end balance	29					29 @ \$50	= \$1,450
FIFO Summary		Cost of Sales	Ending Inventory					
2014		\$2,215						\$810
2015		\$5,415						\$1,320
2016		\$11,950						\$1,450

Income statements

MITEL NETWORKS CORPORATION
(incorporated under the laws of Canada)
CONSOLIDATED STATEMENTS OF OPERATIONS
(in U.S. dollars, millions, except per share amounts)

	Year Ended December 31, 2015	Year Ended December 31, 2014	Eight Months Ended December 31, 2013	Year Ended April 30, 2013
Revenues:				
Enterprise	\$ 869.7	\$ 989.6	\$ 307.0	\$ 524.4
Cloud	156.1	114.4	50.3	52.5
Mobile	131.9	—	—	—
	<u>1,157.7</u>	<u>1,104.0</u>	<u>357.3</u>	<u>576.9</u>
Cost of revenues:				
Enterprise	402.7	457.3	127.5	229.1
Cloud	77.9	56.6	25.8	27.2
Mobile	63.2	—	—	—
	<u>543.8</u>	<u>513.9</u>	<u>153.3</u>	<u>256.3</u>
Gross margin	<u>613.9</u>	<u>590.1</u>	<u>204.0</u>	<u>320.6</u>
Expenses:				
Selling, general and administrative	363.0	344.7	132.1	198.7
Research and development	131.4	118.3	38.3	55.7
Special charges and restructuring costs (note 20)	54.6	72.7	14.6	21.8
Amortization of acquisition-related intangible assets	75.1	53.4	16.5	22.3
	<u>624.1</u>	<u>589.1</u>	<u>201.5</u>	<u>298.5</u>
Operating income (loss)	(10.2)	1.0	2.5	22.1
Interest expense	(32.4)	(21.0)	(17.1)	(19.7)
Debt retirement and other debt costs (note 13)	(9.6)	(16.2)	(0.6)	(2.6)
Other income (expense), net (note 27)	20.9	6.0	(0.4)	1.3
Income (loss) from continuing operations, before income taxes	(31.3)	(30.2)	(15.6)	1.1
Current income tax recovery (expense) (note 23)	(13.4)	(7.7)	(7.7)	(10.3)
Deferred income tax recovery (expense) (note 23)	24.0	30.6	17.8	19.1
Net income (loss) from continuing operations	(20.7)	(7.3)	(5.5)	9.9
Net income (loss) from discontinued operations (note 4)	—	—	—	(3.7)
Net income (loss)	<u>\$ (20.7)</u>	<u>\$ (7.3)</u>	<u>\$ (5.5)</u>	<u>\$ 6.2</u>
Net income (loss) per common share — Basic:				
Net income (loss) per share from continuing operations	\$ (0.18)	\$ (0.08)	\$ (0.10)	\$ 0.19
Net income (loss) per share from discontinued operations	—	—	—	\$ (0.07)
Net income (loss) per share	\$ (0.18)	\$ (0.08)	\$ (0.10)	\$ 0.12
Net income (loss) per common share — Diluted:				
Net income (loss) per share from continuing operations	\$ (0.18)	\$ (0.08)	\$ (0.10)	\$ 0.18
Net income (loss) per share from discontinued operations	—	—	—	\$ (0.07)
Net income (loss) per share	\$ (0.18)	\$ (0.08)	\$ (0.10)	\$ 0.11
Weighted-average number of common shares outstanding (note 19):				
Basic	113.7	95.6	53.9	53.7
Diluted	113.7	95.6	53.9	56.2

(The accompanying notes are an integral part of these Consolidated Financial Statements)

Balance sheets

MITEL NETWORKS CORPORATION
(incorporated under the laws of Canada)
CONSOLIDATED BALANCE SHEETS
(in U.S. dollars, millions)

	December 31, 2015	December 31, 2014
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 91.6	\$ 111.3
Accounts receivable (net of allowance for doubtful accounts of \$17.9 and \$13.2, respectively)	290.2	237.5
Sales-type lease receivables (net) (note 5)	12.6	18.1
Inventories (net) (note 6)	92.8	88.3
Other current assets (note 7)	75.4	53.2
	<u>562.6</u>	<u>508.4</u>
Non-current portion of sales-type lease receivables (net) (note 5)	17.0	19.7
Deferred tax asset (note 23)	159.4	165.3
Property and equipment (net) (note 8)	54.7	50.7
Identifiable intangible assets (net) (note 9)	389.9	175.8
Goodwill (note 10)	658.6	340.3
Other non-current assets	10.5	11.6
	<u>\$ 1,852.7</u>	<u>\$ 1,271.8</u>
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued liabilities (note 11)	\$ 249.4	\$ 215.0
Current portion of deferred revenue	112.3	78.2
Current portion of long-term debt (note 13)	11.7	6.2
	<u>373.4</u>	<u>299.4</u>
Long-term debt (note 13)	633.6	303.6
Long-term portion of deferred revenue	40.1	35.6
Deferred tax liability (note 23)	28.2	15.3
Pension liability (note 24)	126.6	136.1
Other non-current liabilities	35.8	34.0
	<u>1,237.7</u>	<u>824.0</u>
Commitments, guarantees and contingencies (notes 14 and 15)		
Shareholders' equity:		
Common shares, without par value — unlimited shares authorized; issued and outstanding: 120.8 and 100.1, respectively (note 16)	1,414.2	1,216.3
Warrants (note 18)	39.1	39.1
Additional paid-in capital	49.0	38.0
Accumulated deficit	(719.3)	(698.6)
Accumulated other comprehensive loss	(168.0)	(147.0)
	<u>615.0</u>	<u>447.8</u>
	<u>\$ 1,852.7</u>	<u>\$ 1,271.8</u>

(The accompanying notes are an integral part of these Consolidated Financial Statements)

Cash flow statement

MITEL NETWORKS CORPORATION
(incorporated under the laws of Canada)
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in U.S. dollars, millions)

	Year Ended December 31, 2015	Year Ended December 31, 2014	Eight Months Ended December 31, 2013	Year Ended April 30, 2013
CASH PROVIDED BY (USED IN)				
Operating activities:				
Net income (loss)	\$ (20.7)	\$ (7.3)	\$ (5.5)	\$ 6.2
Adjustments to reconcile net income to net cash from operating activities:				
Amortization and depreciation	99.1	75.9	25.5	35.8
Stock-based compensation	12.8	6.1	3.1	4.2
Deferred income tax recovery	(24.0)	(30.6)	(17.8)	(19.1)
Goodwill impairment	—	—	—	1.9
Non-cash portion of debt retirement and other debt costs	9.6	15.7	0.6	2.6
Non-cash movements in provisions	2.7	(2.0)	(2.7)	(1.1)
Change in non-cash operating assets and liabilities, net (note 21)	(24.9)	14.7	14.5	13.5
Net cash provided by operating activities	<u>\$ 54.6</u>	<u>\$ 72.5</u>	<u>\$ 17.7</u>	<u>\$ 44.0</u>
Investing activities:				
Additions to property, equipment and intangible assets	(16.2)	(13.5)	(2.9)	(11.8)
Acquisitions, net of cash acquired (note 3)	(346.7)	(8.2)	(23.1)	—
Decrease in restricted cash	—	—	—	0.2
Net cash used in investing activities	<u>\$ (362.9)</u>	<u>\$ (21.7)</u>	<u>\$ (26.0)</u>	<u>\$ (11.6)</u>
Financing activities:				
Proceeds from issuance of long-term debt (note 13)	653.4	353.2	—	276.4
Repayment of senior credit facilities (note 13)	(307.4)	(309.4)	(21.5)	(306.2)
Repayment of acquired long-term debt (note 3)	(30.4)	—	—	—
Borrowings under the revolving credit facility	21.0	—	—	—
Repayments of the revolving credit facility	(21.0)	—	—	—
Prepayment fees related to repayment of senior credit facilities (note 13)	—	(4.2)	—	—
Payment of deferred financing costs and other debt costs (note 13)	(19.6)	(11.0)	—	(8.5)
Repayment of capital lease liabilities and other long-term debt	(7.3)	(7.3)	(3.3)	(3.2)
Payment of litigation settlement obligation	—	—	—	—
Proceeds from issuance of common shares	4.1	6.7	2.9	0.4
Net cash provided by (used in) financing activities	<u>\$ 292.8</u>	<u>\$ 28.0</u>	<u>\$ (21.9)</u>	<u>\$ (41.1)</u>
Effect of exchange rate changes on cash and cash equivalents	(4.2)	(7.7)	1.4	(1.0)
Increase (decrease) in cash and cash equivalents	(19.7)	71.1	(28.8)	(9.7)
Cash and cash equivalents, beginning of period	111.3	40.2	69.0	78.7
Cash and cash equivalents, end of period	<u>\$ 91.6</u>	<u>\$ 111.3</u>	<u>\$ 40.2</u>	<u>\$ 69.0</u>

(Note 21 contains supplemental cash flow information)

(The accompanying notes are an integral part of these Consolidated Financial Statements)

Mitel Networks' Note 21: Supplementary cash flow information

21. SUPPLEMENTARY CASH FLOW INFORMATION

	Year Ended December 31, 2015	Year Ended December 31, 2014	Eight Months Ended December 31, 2013	Year Ended April 30, 2013
Change in non-cash operating assets and liabilities:				
Accounts receivable and sales-type lease receivables	\$ (20.1)	\$ (23.2)	\$ 30.2	\$ 12.7
Inventories	(0.3)	5.2	(4.2)	0.7
Other current assets	14.2	2.5	4.6	0.9
Other non-current assets	5.3	0.4	0.2	(0.7)
Accounts payable and accrued liabilities	(41.9)	15.2	(17.2)	(2.2)
Deferred revenue	18.8	15.9	1.8	2.3
Other non-current liabilities	0.5	(1.2)	0.2	(0.7)
Change in pension liability	(1.4)	(0.1)	(1.1)	0.5
	\$ (24.9)	\$ 14.7	\$ 14.5	\$ 13.5
Interest payments	\$ 26.1	\$ 18.3	\$ 17.6	\$ 15.7
Income tax payments	\$ 16.3	\$ 17.3	\$ 5.6	\$ 14.6
<i>Disclosure of non-cash activities during the period:</i>				
Property and equipment additions financed through capital lease	\$ 4.0	\$ 5.7	\$ 4.1	\$ 9.1
Property and equipment additions of leasehold improvements as a result of leasehold inducements	\$ —	\$ 2.3	\$ —	\$ —

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Statements of shareholders' equity

MITEL NETWORKS CORPORATION
(incorporated under the laws of Canada)
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
(in U.S. dollars, millions)

	Common Shares			Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total Shareholders' Equity
	Number	Amount	Warrants				
Balance at April 30, 2012	53.6	\$ 809.4	\$ 55.6	\$ 13.7	\$ (692.0)	\$ (96.9)	\$ 89.8
Comprehensive income (loss)	—	—	—	—	6.2	(16.6)	(10.4)
Exercise of stock options	0.1	1.0	—	(0.6)	—	—	0.4
Stock-based compensation	—	—	—	4.2	—	—	4.2
Expiration of warrants	—	—	(16.5)	16.5	—	—	—
Balance at April 30, 2013	53.7	\$ 810.4	\$ 39.1	\$ 33.8	\$ (685.8)	\$ (113.5)	\$ 84.0
Comprehensive income (loss)	—	—	—	—	(5.5)	33.9	28.4
Exercise of stock options	0.7	4.5	—	(1.6)	—	—	2.9
Stock-based compensation	—	—	—	3.1	—	—	3.1
Balance at December 31, 2013	54.4	\$ 814.9	\$ 39.1	\$ 35.3	\$ (691.3)	\$ (79.6)	\$ 118.4
Comprehensive loss	—	—	—	—	(7.3)	(67.4)	(74.7)
Exercise of stock options	1.5	10.1	—	(3.4)	—	—	6.7
Stock-based compensation	—	—	—	6.1	—	—	6.1
Issuance of shares (note 3)	44.2	391.3	—	—	—	—	391.3
Balance at December 31, 2014	100.1	\$ 1,216.3	\$ 39.1	\$ 38.0	\$ (698.6)	\$ (147.0)	\$ 447.8
Comprehensive loss	—	—	—	—	(20.7)	(21.0)	(41.7)
Exercise of stock options and vesting of restricted stock units	1.0	8.7	—	(4.6)	—	—	4.1
Stock-based compensation	—	—	—	12.8	—	—	12.8
Issuance of shares (note 3)	19.7	189.2	—	—	—	—	189.2
Stock options issued as consideration for the acquisition of Mavenir (note 3)	—	—	—	2.8	—	—	2.8
Balance at December 31, 2015	120.8	\$ 1,414.2	\$ 39.1	\$ 49.0	\$ (719.3)	\$ (168.0)	\$ 615.0

(The accompanying notes are an integral part of these Consolidated Financial Statements)

Mitel Networks' Note 20: Special Charges and Restructuring Costs (excerpts)

Special charges and restructuring costs of \$54.6 were recorded in the year ended December 31, 2015. The costs consisted of \$19.7 of employee-related charges, \$1.7 of facility-reduction related charges, \$20.7 of integration-related charges and \$12.5 of acquisition-related charges. The employee-related charges consisted of costs related to headcount reductions of approximately 200 people, primarily in North America and Europe. Facility-reduction related charges consisted primarily of lease termination obligations for facilities, primarily in North America. Integration-related charges primarily consist of professional fees and incidental costs relating to the integration of Aastra and Mavenir. Acquisition-related charges consisted primarily of legal and advisory fees incurred to close the acquisition of Mavenir, as described in note 3.

Omitted text

At December 31, 2015, the workforce reduction liability of \$14.7 and the current portion of the lease termination obligation liability of \$2.6 are included in accounts payable and accrued liabilities, with the remaining non-current portion of the lease termination obligation liability of \$3.0 included in other non-current liabilities.

The following table summarizes details of the Company's restructuring liabilities:

Description	Workforce Reduction	Facility- Reduction Related, Including Lease Termination Obligations	Total
Balance of provision as of April 30, 2012	\$ 1.5	\$ 9.2	\$ 10.7
Year ended April 30, 2013:			
Charges	9.2	5.4	14.6
Cash payments	(8.3)	(8.1)	(16.4)
Foreign currency impact and other	(0.1)	(0.3)	(0.4)
Balance of provision as of April 30, 2013	\$ 2.3	\$ 6.2	\$ 8.5
Eight months ended December 31, 2013:			
Charges	5.3	2.7	8.0
Cash payments	(5.9)	(3.5)	(9.4)
Balance of provision as of December 31, 2013	\$ 1.7	\$ 5.4	\$ 7.1
Year ended December 31, 2014:			
Restructuring liabilities acquired relating to the acquisition of			
Aastra	2.0	0.3	2.3
Charges	37.0	5.4	42.4
Cash payments	(25.2)	(3.5)	(28.7)
Balance of provision as of December 31, 2014	\$ 15.5	\$ 7.6	\$ 23.1
Year ended December 31, 2015:			
Charges	19.7	1.7	21.4
Cash payments	(20.5)	(3.7)	(24.2)
Balance of provision as of December 31, 2015	\$ 14.7	\$ 5.6	\$ 20.3

Mitel Networks' Schedule II

SCHEDULE II

VALUATION OF QUALIFYING ACCOUNTS AS OF DECEMBER 31, 2015 (in U.S. dollars, millions)

Description	Balance, Beginning of Period	Additions			Balance, End of Period
		Charged to expenses	Other (1)	Deductions	
Year Ended April 30, 2013					
Allowance for doubtful accounts, excluding amounts related to lease receivables	\$ 3.4	\$ 2.5	\$ —	\$ (1.1)	\$ 4.8
Allowance for sales-type leases and lease recourse liability	\$ 9.4	\$ 0.7	\$ —	\$ (3.4)	\$ 6.7
Provision for excess and obsolete inventory	\$ 7.2	\$ 2.0	\$ —	\$ (1.9)	\$ 7.3
Eight Months Ended December 31, 2013					
Allowance for doubtful accounts, excluding amounts related to lease receivables	\$ 4.8	\$ 0.7	\$ —	\$ (0.7)	\$ 4.8
Allowance for sales-type leases and lease recourse liability	\$ 6.7	\$ 1.0	\$ —	\$ (2.7)	\$ 5.0
Provision for excess and obsolete inventory	\$ 7.3	\$ 1.3	\$ —	\$ (2.9)	\$ 5.7
Year Ended December 31, 2014					
Allowance for doubtful accounts, excluding amounts related to lease receivables	\$ 4.8	\$ 3.0	\$ 6.1	\$ (1.9)	\$ 12.0
Allowance for sales-type leases and lease recourse liability	\$ 5.0	\$ 0.4	\$ 1.1	\$ (2.2)	\$ 4.3
Provision for excess and obsolete inventory	\$ 5.7	\$ 0.6	\$ —	\$ (0.9)	\$ 5.4
Year Ended December 31, 2015					
Allowance for doubtful accounts, excluding amounts related to lease receivables	\$ 12.0	\$ 6.0	\$ 1.2	\$ (2.2)	\$ 17.0
Allowance for sales-type leases and lease recourse liability	\$ 4.3	\$ —	\$ —	\$ (0.6)	\$ 3.7
Provision for excess and obsolete inventory	\$ 5.4	\$ 3.0	\$ —	\$ (1.0)	\$ 7.4

(1) Primarily relates to acquisitions

Capitalizing Mitel Networks' operating leases

Estimated Present Value of Mitel Network's Operating Lease Payments at 12/31/2015

Assumed discount rate: 5.00%

(Amounts in millions)

Fiscal year	Total reported operating leases	Year	Estimated future payments
2016	\$ 26.5	2016	\$ 26.5
2017	20.6	2017	20.6
2018	16.8	2018	16.8
2019	11.4	2019	11.4
2020	9.1	2020	9.1
Therafter	13.3	2021	9.1
Total minimum rentals	<u>\$ 97.7</u>	2022	<u>4.2</u>
			<u>\$ 97.7</u>
		Present value	\$ 84.72

HERSHEY, INC.

Income statements

THE HERSHEY COMPANY
CONSOLIDATED STATEMENTS OF INCOME
(in thousands, except per share amounts)

For the years ended December 31,	2015	2014	2013
Net sales	\$ 7,386,626	\$ 7,421,768	\$ 7,146,079
Costs and expenses:			
Cost of sales	4,003,951	4,085,602	3,865,231
Selling, marketing and administrative	1,969,308	1,898,284	1,924,132
Goodwill and other intangible asset impairment charges	280,802	15,900	—
Business realignment charges	94,806	29,721	18,665
Total costs and expenses	6,348,867	6,029,507	5,808,028
Operating profit	1,037,759	1,392,261	1,338,051
Interest expense, net	105,773	83,532	88,356
Other (income) expense, net	30,139	2,686	(1,624)
Income before income taxes	901,847	1,306,043	1,251,319
Provision for income taxes	388,896	459,131	430,849
Net income	<u>\$ 512,951</u>	<u>\$ 846,912</u>	<u>\$ 820,470</u>

Net income per share—basic:

Common stock	\$ 2.40	\$ 3.91	\$ 3.76
Class B common stock	\$ 2.19	\$ 3.54	\$ 3.39

Net income per share—diluted:

Common stock	\$ 2.32	\$ 3.77	\$ 3.61
Class B common stock	\$ 2.19	\$ 3.52	\$ 3.37

Dividends paid per share:

Common stock	\$ 2.236	\$ 2.040	\$ 1.81
Class B common stock	\$ 2.032	\$ 1.842	\$ 1.63

Balance sheets

THE HERSHEY COMPANY
CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

December 31,	2015	2014
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 346,529	\$ 374,854
Short-term investments	—	97,131
Accounts receivable—trade, net	599,073	596,940
Inventories	750,970	801,036
Deferred income taxes	—	100,515
Prepaid expenses and other	152,026	276,571
Total current assets	1,848,598	2,247,047
Property, plant and equipment, net	2,240,460	2,151,901
Goodwill	684,252	792,955
Other intangibles	379,305	294,841
Other assets	155,366	136,126
Deferred income taxes	36,390	—
Total assets	<u>\$ 5,344,371</u>	<u>\$ 5,622,870</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 474,266	\$ 482,017
Accrued liabilities	856,967	813,513
Accrued income taxes	23,243	4,616
Short-term debt	363,513	384,696
Current portion of long-term debt	499,923	250,805
Total current liabilities	2,217,912	1,935,647
Long-term debt	1,557,091	1,542,317
Other long-term liabilities	468,718	526,003
Deferred income taxes	53,188	99,373
Total liabilities	4,296,909	4,103,340
Stockholders' equity:		
The Hershey Company stockholders' equity		
Preferred stock, shares issued: none in 2015 and 2014	—	—
Common stock, shares issued: 299,281,967 in 2015 and 299,281,967 in 2014	299,281	299,281
Class B common stock, shares issued: 60,619,777 in 2015 and 60,619,777 in 2014	60,620	60,620
Additional paid-in capital	783,877	754,186
Retained earnings	5,897,603	5,860,784
Treasury—common stock shares, at cost: 143,124,384 in 2015 and 138,856,786 in 2014	(5,672,359)	(5,161,236)
Accumulated other comprehensive loss	(371,025)	(358,573)
The Hershey Company stockholders' equity	997,997	1,455,062
Noncontrolling interests in subsidiaries	49,465	64,468
Total stockholders' equity	1,047,462	1,519,530
Total liabilities and stockholders' equity	<u>\$ 5,344,371</u>	<u>\$ 5,622,870</u>

Cash flow statement

THE HERSHEY COMPANY
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

For the years ended December 31,	2015	2014	2013
Operating Activities			
Net income	\$ 512,951	\$ 846,912	\$ 820,470
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	244,928	211,532	201,033
Stock-based compensation expense	51,533	54,068	53,967
Excess tax benefits from stock-based compensation	(24,839)	(53,497)	(48,396)
Deferred income taxes	(38,537)	18,796	7,457
Non-cash business realignment and impairment charges	283,469	39,988	—
Contributions to pension and other benefits plans	(53,273)	(53,110)	(57,213)
Loss on early extinguishment of debt	28,326	—	—
Write-down of equity investments	39,489	—	—
Changes in assets and liabilities, net of effects from business acquisitions and divestitures:			
Accounts receivable—trade, net	(24,440)	(67,464)	(16,529)
Inventories	52,049	(88,497)	(26,279)
Accounts payable and accrued liabilities	(1,017)	(13,847)	102,411
Other assets and liabilities	143,817	(50,504)	154,478
Net cash provided by operating activities	<u>1,214,456</u>	<u>844,377</u>	<u>1,191,399</u>
Investing Activities			
Capital additions	(329,707)	(345,947)	(323,551)
Capitalized software additions	(27,103)	(24,842)	(27,360)
Proceeds from sales of property, plant and equipment	1,205	1,612	15,331
Proceeds from sale of business	32,408	—	—
Loan to affiliate	—	—	(16,000)
Equity investments in tax credit qualifying partnerships	(30,720)	—	—
Business acquisitions, net of cash and cash equivalents acquired	(218,654)	(396,265)	—
Sale (purchase) of short-term investments	95,316	(97,131)	—
Net cash used in investing activities	<u>(477,255)</u>	<u>(862,573)</u>	<u>(351,580)</u>
Financing Activities			
Net increase in short-term debt	10,720	117,515	54,351
Long-term borrowings	599,031	3,051	250,595
Repayment of long-term debt	(355,446)	(1,442)	(250,761)
Cash dividends paid	(476,132)	(440,414)	(393,801)
Exercise of stock options	72,719	122,306	147,255
Excess tax benefits from stock-based compensation	24,839	53,497	48,396
Contributions from noncontrolling interest	—	2,940	2,940
Payment of contingent consideration	(10,000)	—	—
Purchase of noncontrolling interest	(38,270)	—	—
Repurchase of common stock	(582,623)	(576,755)	(305,564)
Net cash used in financing activities	<u>(755,162)</u>	<u>(719,302)</u>	<u>(446,589)</u>
Effect of exchange rate changes on cash and cash equivalents	(10,364)	(6,156)	(2,994)
(Decrease) increase in cash and cash equivalents	(28,325)	(743,654)	390,236
Cash and cash equivalents, beginning of period	374,854	1,118,508	728,272
Cash and cash equivalents, end of period	<u>\$ 346,529</u>	<u>\$ 374,854</u>	<u>\$ 1,118,508</u>
Supplemental Disclosure			
Interest paid (excluding loss on early extinguishment of debt in 2015)	\$ 88,448	\$ 87,801	\$ 92,551
Income taxes paid	368,926	384,318	373,902

Statements of shareholders' equity

THE HERSHEY COMPANY CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (in thousands)

	Preferred Stock	Common Stock	Class B Common Stock	Additional Paid-in Capital	Retained Earnings	Treasury Common Stock	Accumulated Other Comprehensive Income (Loss)	Noncontrolling Interests in Subsidiaries	Total Stockholders' Equity
Balance, January 1, 2013	\$ —	\$ 299,272	\$ 60,629	\$ 592,975	\$ 5,027,617	\$ (4,558,668)	\$ (385,076)	\$ 11,624	\$ 1,048,373
Net income					820,470				820,470
Other comprehensive income							218,509		218,509
Dividends:									
Common stock, \$1.81 per share					(294,979)				(294,979)
Class B common stock, \$1.63 per share					(98,822)				(98,822)
Conversion of Class B common stock into common stock		9	(9)						—
Stock-based compensation				52,465					52,465
Exercise of stock options and incentive-based transactions				19,504		156,502			176,006
Repurchase of common stock						(305,564)			(305,564)
Earnings of and contributions from noncontrolling interests, net								(406)	(406)
Balance, December 31, 2013	—	299,281	60,620	664,944	5,454,286	(4,707,750)	(166,567)	11,218	1,616,052
Net income					846,912				846,912
Other comprehensive income							(192,006)		(192,006)
Dividends:									
Common stock, \$2.04 per share					(328,752)				(328,752)
Class B common stock, \$1.842 per share					(111,662)				(111,662)
Stock-based compensation				52,870					52,870
Exercise of stock options and incentive-based transactions				36,372		123,249			159,621
Repurchase of common stock						(576,755)			(576,755)
Acquisition of Lotte Shanghai Food Company								49,724	49,724
Earnings of and contributions from noncontrolling interests, net								3,526	3,526
Balance, December 31, 2014	—	299,281	60,620	754,186	5,860,784	(5,161,236)	(358,573)	64,468	1,519,530
Net income					512,951				512,951
Other comprehensive loss							(12,452)		(14,604)
Dividends:									
Common stock, \$2.236 per share					(352,953)				(352,953)
Class B common stock, \$2.032 per share					(123,179)				(123,179)
Stock-based compensation				50,722					50,722
Exercise of stock options and incentive-based transactions				8,204		71,500			79,704
Repurchase of common stock						(582,623)			(582,623)
Impact of reclassification to and purchase of redeemable noncontrolling interest				(29,235)				(13,428)	(42,663)
Earnings of noncontrolling interests								577	577
Balance, December 31, 2015	—	299,281	60,620	783,877	\$ 5,897,603	\$ (5,672,359)	\$ (371,025)	\$ 49,465	\$ 1,047,462

Hershey's Summary of Significant Accounting Policies (related to advertising)

Selling, Marketing and Administrative Expense

Selling, marketing and administrative expense ("SM&A") represents costs incurred in generating revenues and in managing our business. Such costs include advertising and other marketing expenses, selling expenses, research and development, administrative and other indirect overhead costs, amortization of capitalized software and depreciation of administrative facilities. Research and development costs, charged to expense as incurred, totaled \$49,281 in 2015, \$47,554 in 2014 and \$47,636 in 2013. Advertising expense is also charged to expense as incurred and totaled \$561,644 in 2015, \$570,223 in 2014 and \$582,354 in 2013. Prepaid advertising expense was \$3,924 and \$8,193 as of December 31, 2015 and 2014, respectively.

Hershey's Note 3: Goodwill and Intangible Assets (excerpt)

3. GOODWILL AND INTANGIBLE ASSETS

The changes in the carrying value of goodwill by reportable segment for the years ended December 31, 2015 and 2014 are as follows:

	North America	International and Other	Total
Goodwill	\$ 543,628	\$ 103,079	\$ 646,707
Accumulated impairment loss	(4,973)	(65,173)	(70,146)
Balance at January 1, 2014	538,655	37,906	576,561
Acquired during the period	6,996	235,138	242,134
Impairment	—	(11,400)	(11,400)
Transfer to assets held for sale	(1,448)	—	(1,448)
Foreign currency translation	(10,854)	(2,038)	(12,892)
Balance at December 31, 2014	533,349	259,606	792,955
Acquired during the period	147,334	—	147,334
Impairment	—	(280,802)	(280,802)
Purchase price allocation adjustments	1,575	46,203	47,778
Foreign currency translation	(20,175)	(2,838)	(23,013)
Balance at December 31, 2015	\$ 662,083	\$ 22,169	\$ 684,252

Omitted text

Total amortization expense for the years ended December 31, 2015, 2014 and 2013 was \$22,306, \$11,328 and \$10,849, respectively.

Amortization expense for the next five years, based on current intangible balances, is estimated to be as follows:

Year ending December 31,	2016	2017	2018	2019	2020
Amortization expense	\$ 21,928	\$ 21,546	\$ 20,006	\$ 19,899	\$ 19,660

Hershey's Note 15: Supplemental Balance Sheet Information

15. SUPPLEMENTAL BALANCE SHEET INFORMATION

The components of certain Consolidated Balance Sheet accounts are as follows:

December 31,	2015	2014
Inventories:		
Raw materials	\$ 353,451	\$ 377,620
Goods in process	67,745	63,916
Finished goods	534,983	531,608
Inventories at FIFO	956,179	973,144
Adjustment to LIFO	(205,209)	(172,108)
Total inventories	<u>\$ 750,970</u>	<u>\$ 801,036</u>
Property, plant and equipment:		
Land	\$ 96,666	\$ 95,913
Buildings	1,084,958	1,031,050
Machinery and equipment	2,886,723	2,863,559
Construction in progress	448,956	338,085
Property, plant and equipment, gross	4,517,303	4,328,607
Accumulated depreciation	(2,276,843)	(2,176,706)
Property, plant and equipment, net	<u>\$ 2,240,460</u>	<u>\$ 2,151,901</u>
Other assets:		
Pension	\$ —	\$ 25
Capitalized software, net	68,004	63,252
Income tax receivable	1,428	1,568
Other non-current assets	85,934	71,281
Total other assets	<u>\$ 155,366</u>	<u>\$ 136,126</u>
Accrued liabilities:		
Payroll, compensation and benefits	\$ 215,638	\$ 225,439
Advertising and promotion	337,945	326,647
Due to SGM shareholders	72,025	98,884
Other	231,359	162,543
Total accrued liabilities	<u>\$ 856,967</u>	<u>\$ 813,513</u>
Other long-term liabilities:		
Post-retirement benefits liabilities	\$ 231,412	\$ 268,850
Pension benefits liabilities	122,681	114,923
Other	114,625	142,230
Total other long-term liabilities	<u>\$ 468,718</u>	<u>\$ 526,003</u>

Present Value of \$1

Present value at time 0 (start of first period) of receiving \$1 at the end of the designated period, discounted at the designated rate.

Periods	0.25%	0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.25%	2.50%	2.75%	3.00%	3.50%	4.00%
1	0.9975	0.995	0.9926	0.9901	0.9877	0.9852	0.9828	0.9804	0.978	0.9756	0.9732	0.9709	0.9662	0.9615
2	0.995	0.9901	0.9852	0.9803	0.9755	0.9707	0.9659	0.9612	0.9565	0.9518	0.9472	0.9426	0.9335	0.9246
3	0.9925	0.9851	0.9778	0.9706	0.9634	0.9563	0.9493	0.9423	0.9354	0.9286	0.9218	0.9151	0.9019	0.889
4	0.9901	0.9802	0.9706	0.961	0.9515	0.9422	0.933	0.9238	0.9148	0.906	0.8972	0.8885	0.8714	0.8548
5	0.9876	0.9754	0.9633	0.9515	0.9398	0.9283	0.9169	0.9057	0.8947	0.8839	0.8732	0.8626	0.842	0.8219
6	0.9851	0.9705	0.9562	0.942	0.9282	0.9145	0.9011	0.888	0.875	0.8623	0.8498	0.8375	0.8135	0.7903
7	0.9827	0.9657	0.949	0.9327	0.9167	0.901	0.8856	0.8706	0.8558	0.8413	0.827	0.8131	0.786	0.7599
8	0.9802	0.9609	0.942	0.9235	0.9054	0.8877	0.8704	0.8535	0.8369	0.8207	0.8049	0.7894	0.7594	0.7307
9	0.9778	0.9561	0.935	0.9143	0.8942	0.8746	0.8554	0.8368	0.8185	0.8007	0.7834	0.7664	0.7337	0.7026
10	0.9753	0.9513	0.928	0.9053	0.8832	0.8617	0.8407	0.8203	0.8005	0.7812	0.7624	0.7441	0.7089	0.6756
11	0.9729	0.9466	0.9211	0.8963	0.8723	0.8489	0.8263	0.8043	0.7829	0.7621	0.742	0.7224	0.6849	0.6496
12	0.9705	0.9419	0.9142	0.8874	0.8615	0.8364	0.8121	0.7885	0.7657	0.7436	0.7221	0.7014	0.6618	0.6246
13	0.9681	0.9372	0.9074	0.8787	0.8509	0.824	0.7981	0.773	0.7488	0.7254	0.7028	0.681	0.6394	0.6006
14	0.9656	0.9326	0.9007	0.87	0.8404	0.8118	0.7844	0.7579	0.7323	0.7077	0.684	0.6611	0.6178	0.5775
15	0.9632	0.9279	0.894	0.8613	0.83	0.7999	0.7709	0.743	0.7162	0.6905	0.6657	0.6419	0.5969	0.5553
16	0.9608	0.9233	0.8873	0.8528	0.8197	0.788	0.7576	0.7284	0.7005	0.6736	0.6479	0.6232	0.5767	0.5339
17	0.9584	0.9187	0.8807	0.8444	0.8096	0.7764	0.7446	0.7142	0.6851	0.6572	0.6305	0.605	0.5572	0.5134
18	0.9561	0.9141	0.8742	0.836	0.7996	0.7649	0.7318	0.7002	0.67	0.6412	0.6137	0.5874	0.5384	0.4936
19	0.9537	0.9096	0.8676	0.8277	0.7898	0.7536	0.7192	0.6864	0.6552	0.6255	0.5972	0.5703	0.5202	0.4746
20	0.9513	0.9051	0.8612	0.8195	0.78	0.7425	0.7068	0.673	0.6408	0.6103	0.5813	0.5537	0.5026	0.4564
21	0.9489	0.9006	0.8548	0.8114	0.7704	0.7315	0.6947	0.6598	0.6267	0.5954	0.5657	0.5375	0.4856	0.4388
22	0.9466	0.8961	0.8484	0.8034	0.7609	0.7207	0.6827	0.6468	0.6129	0.5809	0.5506	0.5219	0.4692	0.422
23	0.9442	0.8916	0.8421	0.7954	0.7515	0.71	0.671	0.6342	0.5994	0.5667	0.5358	0.5067	0.4533	0.4057
24	0.9418	0.8872	0.8358	0.7876	0.7422	0.6995	0.6594	0.6217	0.5862	0.5529	0.5215	0.4919	0.438	0.3901
25	0.9395	0.8828	0.8296	0.7798	0.733	0.6892	0.6481	0.6095	0.5733	0.5394	0.5075	0.4776	0.4231	0.3751
26	0.9371	0.8784	0.8234	0.772	0.724	0.679	0.6369	0.5976	0.5607	0.5262	0.4939	0.4637	0.4088	0.3607
27	0.9348	0.874	0.8173	0.7644	0.715	0.669	0.626	0.5859	0.5484	0.5134	0.4807	0.4502	0.395	0.3468
28	0.9325	0.8697	0.8112	0.7568	0.7062	0.6591	0.6152	0.5744	0.5363	0.5009	0.4679	0.4371	0.3817	0.3335
29	0.9301	0.8653	0.8052	0.7493	0.6975	0.6494	0.6046	0.5631	0.5245	0.4887	0.4553	0.4243	0.3687	0.3207
30	0.9278	0.861	0.7992	0.7419	0.6889	0.6398	0.5942	0.5521	0.513	0.4767	0.4431	0.412	0.3563	0.3083
31	0.9255	0.8567	0.7932	0.7346	0.6804	0.6303	0.584	0.5412	0.5017	0.4651	0.4313	0.4	0.3442	0.2965
32	0.9232	0.8525	0.7873	0.7273	0.672	0.621	0.574	0.5306	0.4907	0.4538	0.4197	0.3883	0.3326	0.2851
33	0.9209	0.8482	0.7815	0.7201	0.6637	0.6118	0.5641	0.5202	0.4799	0.4427	0.4085	0.377	0.3213	0.2741
34	0.9186	0.844	0.7757	0.713	0.6555	0.6028	0.5544	0.51	0.4693	0.4319	0.3976	0.366	0.3105	0.2636
35	0.9163	0.8398	0.7699	0.7059	0.6474	0.5939	0.5449	0.5	0.459	0.4214	0.3869	0.3554	0.3	0.2534
36	0.914	0.8356	0.7641	0.6989	0.6394	0.5851	0.5355	0.4902	0.4489	0.4111	0.3766	0.345	0.2898	0.2437

Periods	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%	9.00%	9.50%	10.00%	10.50%	11.00%
1	0.9569	0.9524	0.9479	0.9434	0.939	0.9346	0.9302	0.9259	0.9217	0.9174	0.9132	0.9091	0.905	0.9009
2	0.9157	0.907	0.8985	0.89	0.8817	0.8734	0.8653	0.8573	0.8495	0.8417	0.834	0.8264	0.819	0.8116
3	0.8763	0.8638	0.8516	0.8396	0.8278	0.8163	0.805	0.7938	0.7829	0.7722	0.7617	0.7513	0.7412	0.7312
4	0.8386	0.8227	0.8072	0.7921	0.7773	0.7629	0.7488	0.735	0.7216	0.7084	0.6956	0.683	0.6707	0.6587
5	0.8025	0.7835	0.7651	0.7473	0.7299	0.713	0.6966	0.6806	0.665	0.6499	0.6352	0.6209	0.607	0.5935
6	0.7679	0.7462	0.7252	0.705	0.6853	0.6663	0.648	0.6302	0.6129	0.5963	0.5801	0.5645	0.5493	0.5346
7	0.7348	0.7107	0.6874	0.6651	0.6435	0.6227	0.6028	0.5835	0.5649	0.547	0.5298	0.5132	0.4971	0.4817
8	0.7032	0.6768	0.6516	0.6274	0.6042	0.582	0.5607	0.5403	0.5207	0.5019	0.4838	0.4665	0.4499	0.4339
9	0.6729	0.6446	0.6176	0.5919	0.5674	0.5439	0.5216	0.5002	0.4799	0.4604	0.4418	0.4241	0.4071	0.3909
10	0.6439	0.6139	0.5854	0.5584	0.5327	0.5083	0.4852	0.4632	0.4423	0.4224	0.4035	0.3855	0.3684	0.3522
11	0.6162	0.5847	0.5549	0.5268	0.5002	0.4751	0.4513	0.4289	0.4076	0.3875	0.3685	0.3505	0.3334	0.3173
12	0.5897	0.5568	0.526	0.497	0.4697	0.444	0.4199	0.3971	0.3757	0.3555	0.3365	0.3186	0.3018	0.2858
13	0.5643	0.5303	0.4986	0.4688	0.441	0.415	0.3906	0.3677	0.3463	0.3262	0.3073	0.2897	0.2731	0.2575
14	0.54	0.5051	0.4726	0.4423	0.4141	0.3878	0.3633	0.3405	0.3191	0.2992	0.2807	0.2633	0.2471	0.232
15	0.5167	0.481	0.4479	0.4173	0.3888	0.3624	0.338	0.3152	0.2941	0.2745	0.2563	0.2394	0.2236	0.209
16	0.4945	0.4581	0.4246	0.3936	0.3651	0.3387	0.3144	0.2919	0.2711	0.2519	0.2341	0.2176	0.2024	0.1883
17	0.4732	0.4363	0.4024	0.3714	0.3428	0.3166	0.2925	0.2703	0.2499	0.2311	0.2138	0.1978	0.1832	0.1696
18	0.4528	0.4155	0.3815	0.3503	0.3219	0.2959	0.272	0.2502	0.2303	0.212	0.1952	0.1799	0.1658	0.1528
19	0.4333	0.3957	0.3616	0.3305	0.3022	0.2765	0.2531	0.2317	0.2122	0.1945	0.1783	0.1635	0.15	0.1377
20	0.4146	0.3769	0.3427	0.3118	0.2838	0.2584	0.2354	0.2145	0.1956	0.1784	0.1628	0.1486	0.1358	0.124
21	0.3968	0.3589	0.3249	0.2942	0.2665	0.2415	0.219	0.1987	0.1803	0.1637	0.1487	0.1351	0.1229	0.1117
22	0.3797	0.3418	0.3079	0.2775	0.2502	0.2257	0.2037	0.1839	0.1662	0.1502	0.1358	0.1228	0.1112	0.1007
23	0.3634	0.3256	0.2919	0.2618	0.2349	0.2109	0.1895	0.1703	0.1531	0.1378	0.124	0.1117	0.1006	0.0907
24	0.3477	0.3101	0.2767	0.247	0.2206	0.1971	0.1763	0.1577	0.1412	0.1264	0.1133	0.1015	0.0911	0.0817
25	0.3327	0.2953	0.2622	0.233	0.2071	0.1842	0.164	0.146	0.1301	0.116	0.1034	0.0923	0.0824	0.0736
26	0.3184	0.2812	0.2486	0.2198	0.1945	0.1722	0.1525	0.1352	0.1199	0.1064	0.0945	0.0839	0.0746	0.0663
27	0.3047	0.2678	0.2356	0.2074	0.1826	0.1609	0.1419	0.1252	0.1105	0.0976	0.0863	0.0763	0.0675	0.0597
28	0.2916	0.2551	0.2233	0.1956	0.1715	0.1504	0.132	0.1159	0.1019	0.0895	0.0788	0.0693	0.0611	0.0538
29	0.279	0.2429	0.2117	0.1846	0.161	0.1406	0.1228	0.1073	0.0939	0.0822	0.0719	0.063	0.0553	0.0485
30	0.267	0.2314	0.2006	0.1741	0.1512	0.1314	0.1142	0.0994	0.0865	0.0754	0.0657	0.0573	0.05	0.0437
31	0.2555	0.2204	0.1902	0.1643	0.142	0.1228	0.1063	0.092	0.0797	0.0691	0.06	0.0521	0.0453	0.0394
32	0.2445	0.2099	0.1803	0.155	0.1333	0.1147	0.0988	0.0852	0.0735	0.0634	0.0548	0.0474	0.041	0.0355
33	0.234	0.1999	0.1709	0.1462	0.1252	0.1072	0.0919	0.0789	0.0677	0.0582	0.05	0.0431	0.0371	0.0319
34	0.2239	0.1904	0.162	0.1379	0.1175	0.1002	0.0855	0.073	0.0624	0.0534	0.0457	0.0391	0.0335	0.0288
35	0.2143	0.1813	0.1535	0.1301	0.1103	0.0937	0.0796	0.0676	0.0575	0.049	0.0417	0.0356	0.0304	0.0259
36	0.205	0.1727	0.1455	0.1227	0.1036	0.0875	0.074	0.0626	0.053	0.0449	0.0381	0.0323	0.0275	0.0234

Present Value of Annuity of \$1 at the End of Each Period

Present value at time 0 of receiving \$1 at the end of each period through to and including the designated period, discounted at the designated rate.
(Table values are the same as using Excel PV function with "type" set to 0)

Periods	0.25%	0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.25%	2.50%	2.75%	3.00%	3.50%	4.00%
1	0.9975	0.995	0.9926	0.9901	0.9877	0.9852	0.9828	0.9804	0.978	0.9756	0.9732	0.9709	0.9662	0.9615
2	1.9925	1.9851	1.9778	1.9704	1.9632	1.9559	1.9487	1.9416	1.9345	1.9274	1.9204	1.9135	1.8997	1.8861
3	2.985	2.9702	2.9556	2.941	2.9266	2.9122	2.898	2.8839	2.8699	2.856	2.8422	2.8286	2.8016	2.7751
4	3.9751	3.9504	3.9262	3.902	3.8781	3.8544	3.831	3.8077	3.7847	3.762	3.7394	3.7171	3.673	3.6299
5	4.9627	4.9258	4.8895	4.8535	4.8179	4.7827	4.7479	4.7134	4.6794	4.6459	4.6126	4.5797	4.515	4.4518
6	5.9478	5.8963	5.8457	5.7955	5.7461	5.6972	5.649	5.6014	5.5544	5.5082	5.4624	5.4172	5.3285	5.2421
7	6.9305	6.862	6.7947	6.7282	6.6628	6.5982	6.5346	6.472	6.4102	6.3495	6.2894	6.2303	6.1145	6.002
8	7.9107	7.8229	7.7367	7.6517	7.5682	7.4859	7.405	7.3255	7.2471	7.1702	7.0943	7.0197	6.8739	6.7327
9	8.8885	8.779	8.6717	8.566	8.4624	8.3605	8.2604	8.1623	8.0656	7.9709	7.8777	7.7861	7.6076	7.4353
10	9.8638	9.7303	9.5997	9.4713	9.3456	9.2222	9.1011	8.9826	8.8661	8.7521	8.6401	8.5302	8.3165	8.1109
11	10.8367	10.6769	10.5208	10.3676	10.2179	10.0711	9.9274	9.7869	9.649	9.5142	9.3821	9.2526	9.0014	8.7605
12	11.8072	11.6188	11.435	11.255	11.0794	10.9075	10.7395	10.5754	10.4147	10.2578	10.1042	9.954	9.6632	9.3851
13	12.7753	12.556	12.3424	12.1337	11.9303	11.7315	11.5376	11.3484	11.1635	10.9832	10.807	10.635	10.3026	9.9857
14	13.7409	13.4886	13.2431	13.0037	12.7707	12.5433	12.322	12.1063	11.8958	11.6909	11.491	11.2961	10.9204	10.5632
15	14.7041	14.4165	14.1371	13.865	13.6007	13.3432	13.0929	12.8493	12.612	12.3814	12.1567	11.938	11.5173	11.1185
16	15.6649	15.3398	15.0244	14.7178	14.4204	14.1312	13.8505	13.5777	13.3125	13.055	12.8046	12.5612	12.094	11.6524
17	16.6233	16.2585	15.9051	15.5622	15.23	14.9076	14.5951	14.2919	13.9976	13.7122	13.4351	13.1662	12.6512	12.1658
18	17.5794	17.1726	16.7793	16.3982	16.0296	15.6725	15.3269	14.9921	14.6676	14.3534	14.0488	13.7536	13.1896	12.6594
19	18.5331	18.0822	17.6469	17.2259	16.8194	16.4261	16.0461	15.6785	15.3228	14.9789	14.646	14.3239	13.7098	13.134
20	19.4844	18.9873	18.5081	18.0454	17.5994	17.1686	16.7529	16.3515	15.9636	15.5892	15.2273	14.8776	14.2124	13.5904
21	20.4333	19.8879	19.3629	18.8568	18.3698	17.9001	17.4476	17.0113	16.5903	16.1846	15.793	15.4151	14.698	14.0292
22	21.3799	20.784	20.2113	19.6602	19.1307	18.6208	18.1303	17.6581	17.2032	16.7655	16.3436	15.937	15.1672	14.4512
23	22.3241	21.6756	21.0534	20.4556	19.8822	19.3308	18.8013	18.2923	17.8026	17.3322	16.8794	16.4437	15.6205	14.8569
24	23.2659	22.5628	21.8892	21.2432	20.6244	20.0303	19.4607	18.914	18.3888	17.8851	17.4009	16.9356	16.0585	15.247
25	24.2054	23.4456	22.7188	22.023	21.3574	20.7195	20.1088	19.5235	18.9621	18.4245	17.9084	17.4132	16.4816	15.6221
26	25.1425	24.324	23.5422	22.795	22.0814	21.3985	20.7457	20.1211	19.5228	18.9507	18.4023	17.8769	16.8904	15.9828
27	26.0773	25.198	24.3595	23.5594	22.7964	22.0675	21.3717	20.707	20.0712	19.4641	18.883	18.3271	17.2854	16.3296
28	27.0098	26.0677	25.1707	24.3162	23.5026	22.7266	21.9869	21.2814	20.6075	19.965	19.3509	18.7642	17.6671	16.6631
29	27.9399	26.933	25.9759	25.0655	24.2001	23.376	22.5915	21.8445	21.132	20.4537	19.8062	19.1885	18.0358	16.9838
30	28.8677	27.794	26.7751	25.8074	24.889	24.0158	23.1857	22.3966	21.645	20.9304	20.2493	19.6005	18.3921	17.2921
31	29.7932	28.6507	27.5683	26.542	25.5694	24.6461	23.7697	22.9378	22.1467	21.3955	20.6806	20.0005	18.7363	17.5886
32	30.7164	29.5032	28.3556	27.2693	26.2414	25.2671	24.3437	23.4684	22.6374	21.8493	21.1003	20.3888	19.0689	17.8737
33	31.6373	30.3514	29.1371	27.9894	26.9051	25.8789	24.9078	23.9886	23.1173	22.292	21.5088	20.7658	19.3902	18.1478
34	32.5559	31.1954	29.9128	28.7024	27.5606	26.4817	25.4622	24.4986	23.5866	22.7239	21.9064	21.1318	19.7007	18.4114
35	33.4722	32.0352	30.6827	29.4083	28.208	27.0756	26.0071	24.9986	24.0456	23.1453	22.2933	21.4872	20.0007	18.6648
36	34.3862	32.8708	31.4468	30.1072	28.8474	27.6607	26.5426	25.4888	24.4945	23.5564	22.6699	21.8322	20.2905	18.9085

Periods	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%	9.00%	9.50%	10.00%	10.50%	11.00%
1	0.9569	0.9524	0.9479	0.9434	0.939	0.9346	0.9302	0.9259	0.9217	0.9174	0.9132	0.9091	0.905	0.9009
2	1.8726	1.8594	1.8464	1.8334	1.8207	1.808	1.7955	1.7832	1.7712	1.7591	1.7472	1.7355	1.724	1.7125
3	2.7489	2.7232	2.698	2.673	2.6485	2.6243	2.6005	2.577	2.5541	2.5313	2.5089	2.4868	2.4652	2.4437
4	3.5875	3.5459	3.5052	3.4651	3.4258	3.3872	3.3493	3.312	3.2757	3.2397	3.2045	3.1698	3.1359	3.1024
5	4.39	4.3294	4.2703	4.2124	4.1557	4.1002	4.0459	3.9926	3.9407	3.8896	3.8397	3.7907	3.7429	3.6959
6	5.1579	5.0756	4.9955	4.9174	4.841	4.7665	4.6939	4.6228	4.5536	4.4859	4.4198	4.3552	4.2922	4.2305
7	5.8927	5.7863	5.6829	5.5825	5.4845	5.3892	5.2967	5.2063	5.1185	5.0329	4.9496	4.8684	4.7893	4.7122
8	6.5959	6.4631	6.3345	6.2099	6.0887	5.9712	5.8574	5.7466	5.6392	5.5348	5.4334	5.3349	5.2392	5.1461
9	7.2688	7.1077	6.9521	6.8018	6.6561	6.5151	6.379	6.2468	6.1191	5.9952	5.8752	5.759	5.6463	5.537
10	7.9127	7.7216	7.5375	7.3602	7.1888	7.0234	6.8642	6.71	6.5614	6.4176	6.2787	6.1445	6.0147	5.8892
11	8.5289	8.3063	8.0924	7.887	7.689	7.4985	7.3155	7.1389	6.969	6.8051	6.6472	6.495	6.3481	6.2065
12	9.1186	8.8631	8.6184	8.384	8.1587	7.9425	7.7354	7.536	7.3447	7.1606	6.9837	6.8136	6.6499	6.4923
13	9.6829	9.3934	9.117	8.8528	8.5997	8.3575	8.126	7.9037	7.691	7.4868	7.291	7.1033	6.923	6.7498
14	10.2229	9.8985	9.5896	9.2951	9.0138	8.7453	8.4893	8.2442	8.0101	7.786	7.5717	7.3666	7.1701	6.9818
15	10.7396	10.3795	10.0375	9.7124	9.4026	9.1077	8.8273	8.5594	8.3042	8.0605	7.828	7.606	7.3937	7.1908
16	11.2341	10.8376	10.4621	10.106	9.7677	9.4464	9.1417	8.8513	8.5753	8.3124	8.0621	7.8236	7.5961	7.3791
17	11.7073	11.2739	10.8645	10.4774	10.1105	9.763	9.4342	9.1216	8.8252	8.5435	8.2759	8.0214	7.7793	7.5487
18	12.1601	11.6894	11.246	10.8277	10.4324	10.0589	9.7062	9.3718	9.0555	8.7555	8.4711	8.2013	7.9451	7.7015
19	12.5934	12.0851	11.6076	11.1582	10.7346	10.3354	9.9593	9.6035	9.2677	8.95	8.6494	8.3648	8.0951	7.8392
20	13.008	12.462	11.9503	11.47	11.0184	10.5938	10.1947	9.818	9.4633	9.1284	8.8122	8.5134	8.2309	7.9632
21	13.4048	12.8209	12.2752	11.7642	11.2849	10.8353	10.4137	10.0167	9.6436	9.2921	8.9609	8.6485	8.3538	8.0749
22	13.7845	13.1627	12.5831	12.0417	11.5351	11.061	10.6174	10.2006	9.8098	9.4423	9.0967	8.7713	8.465	8.1756
23	14.1479	13.4883	12.875	12.3035	11.77	11.2719	10.8069	10.3709	9.9629	9.5801	9.2207	8.883	8.5656	8.2663
24	14.4956	13.7984	13.1517	12.5505	11.9906	11.469	10.9832	10.5286	10.1041	9.7065	9.334	8.9845	8.6567	8.348
25	14.8283	14.0937	13.4139	12.7835	12.1977	11.6532	11.1472	10.6746	10.2342	9.8225	9.4374	9.0768	8.7391	8.4216
26	15.1467	14.3749	13.6625	13.0033	12.3922	11.8254	11.2997	10.8098	10.3541	9.9289	9.5319	9.1607	8.8137	8.4879
27	15.4514	14.6427	13.8981	13.2107	12.5748	11.9863	11.4416	10.935	10.4646	10.0265	9.6182	9.237	8.8812	8.5476
28	15.743	14.8978	14.1214	13.4063	12.7463	12.1367	11.5736	11.0509	10.5665	10.116	9.697	9.3063	8.9423	8.6014
29	16.022	15.1407	14.3331	13.5909	12.9073	12.2773	11.6964	11.1582	10.6604	10.1982	9.7689	9.3693	8.9976	8.6499
30	16.289	15.3721	14.5337	13.765	13.0585	12.4087	11.8106	11.2576	10.7469	10.2736	9.8346	9.4266	9.0476	8.6936
31	16.5445	15.5925	14.7239	13.9293	13.2005	12.5315	11.9169	11.3496	10.8266	10.3427	9.8946	9.4787	9.0929	8.733
32	16.789	15.8024	14.9042	14.0843	13.3338	12.6462	12.0157	11.4348	10.9001	10.4061	9.9494	9.5261	9.1339	8.7685
33	17.023	16.0023	15.0751	14.2305	13.459	12.7534	12.1076	11.5137	10.9678	10.4643	9.9994	9.5692	9.171	8.8004

Present Value of Annuity of \$1 at the Start of Each Period

Present value at time 0 of receiving \$1 at the **start** of each period through to and including the designated period, discounted at the designated rate.
(Table values are the same as using Excel PV function with "type" set to 1)

Periods	0.25%	0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.25%	2.50%	2.75%	3.00%	3.50%	4.00%
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1.9975	1.995	1.9926	1.9901	1.9877	1.9852	1.9828	1.9804	1.978	1.9756	1.9732	1.9709	1.9662	1.9615
3	2.9925	2.9851	2.9778	2.9704	2.9632	2.9559	2.9487	2.9416	2.9345	2.9274	2.9204	2.9135	2.8997	2.8861
4	3.985	3.9702	3.9556	3.941	3.9266	3.9122	3.898	3.8839	3.8699	3.856	3.8422	3.8286	3.8016	3.7751
5	4.9751	4.9504	4.9262	4.902	4.8781	4.8544	4.831	4.8077	4.7847	4.762	4.7394	4.7171	4.673	4.6299
6	5.9627	5.9258	5.8895	5.8535	5.8179	5.7827	5.7479	5.7134	5.6794	5.6459	5.6126	5.5797	5.515	5.4518
7	6.9478	6.8963	6.8457	6.7955	6.7461	6.6972	6.649	6.6014	6.5544	6.5082	6.4624	6.4172	6.3285	6.2421
8	7.9305	7.862	7.7947	7.7282	7.6628	7.5982	7.5346	7.472	7.4102	7.3495	7.2894	7.2303	7.1145	7.002
9	8.9107	8.8229	8.7367	8.6517	8.5682	8.4859	8.405	8.3255	8.2471	8.1702	8.0943	8.0197	7.8739	7.7327
10	9.8885	9.779	9.6717	9.566	9.4624	9.3605	9.2604	9.1623	9.0656	8.9709	8.8777	8.7861	8.6076	8.4353
11	10.8638	10.7303	10.5997	10.4713	10.3456	10.2222	10.1011	9.9826	9.8661	9.7521	9.6401	9.5302	9.3165	9.1109
12	11.8367	11.6769	11.5208	11.3676	11.2179	11.0711	10.9274	10.7869	10.649	10.5142	10.3821	10.2526	10.0014	9.7605
13	12.8072	12.6188	12.435	12.255	12.0794	11.9075	11.7395	11.5754	11.4147	11.2578	11.1042	10.954	10.6632	10.3851
14	13.7753	13.556	13.3424	13.1337	12.9303	12.7315	12.5376	12.3484	12.1635	11.9832	11.807	11.635	11.3026	10.9857
15	14.7409	14.4886	14.2431	14.0037	13.7707	13.5433	13.322	13.1063	12.8958	12.6909	12.491	12.2961	11.9204	11.5632
16	15.7041	15.4165	15.1371	14.865	14.6007	14.3432	14.0929	13.8493	13.612	13.3814	13.1567	12.938	12.5173	12.1185
17	16.6649	16.3398	16.0244	15.7178	15.4204	15.1312	14.8505	14.5777	14.3125	14.055	13.8046	13.5612	13.094	12.6524
18	17.6233	17.2585	16.9051	16.5622	16.23	15.9076	15.5951	15.2919	14.9976	14.7122	14.4351	14.1662	13.6512	13.1658
19	18.5794	18.1726	17.7793	17.3982	17.0296	16.6725	16.3269	15.9921	15.6676	15.3534	15.0488	14.7536	14.1896	13.6594
20	19.5331	19.0822	18.6469	18.2259	17.8194	17.4261	17.0461	16.6785	16.3228	15.9789	15.646	15.3239	14.7098	14.134
21	20.4844	19.9873	19.5081	19.0454	18.5994	18.1686	17.7529	17.3515	16.9636	16.5892	16.2273	15.8776	15.2124	14.5904
22	21.4333	20.8879	20.3629	19.8568	19.3698	18.9001	18.4476	18.0113	17.5903	17.1846	16.793	16.4151	15.698	15.0292
23	22.3799	21.784	21.2113	20.6602	20.1307	19.6208	19.1303	18.6581	18.2032	17.7655	17.3436	16.937	16.1672	15.4512
24	23.3241	22.6756	22.0534	21.4556	20.8822	20.3308	19.8013	19.2923	18.8026	18.3322	17.8794	17.4437	16.6205	15.8569
25	24.2659	23.5628	22.8892	22.2432	21.6244	21.0303	20.4607	19.914	19.3888	18.8851	18.4009	17.9356	17.0585	16.247
26	25.2054	24.4456	23.7188	23.023	22.3574	21.7195	21.1088	20.5235	19.9621	19.4245	18.9084	18.4132	17.4816	16.6221
27	26.1425	25.324	24.5422	23.795	23.0814	22.3985	21.7457	21.1211	20.5228	19.9507	19.4023	18.8769	17.8904	16.9828
28	27.0773	26.198	25.3595	24.5594	23.7964	23.0675	22.3717	21.707	21.0712	20.4641	19.883	19.3271	18.2854	17.3296
29	28.0098	27.0677	26.1707	25.3162	24.5026	23.7266	22.9869	22.2814	21.6075	20.965	20.3509	19.7642	18.6671	17.6631
30	28.9399	27.933	26.9759	26.0655	25.2001	24.376	23.5915	22.8445	22.132	21.4537	20.8062	20.1885	19.0358	17.9838
31	29.8677	28.794	27.7751	26.8074	25.889	25.0158	24.1857	23.3966	22.645	21.9304	21.2493	20.6005	19.3921	18.2921
32	30.7932	29.6507	28.5683	27.542	26.5694	25.6461	24.7697	23.9378	23.1467	22.3955	21.6806	21.0005	19.7363	18.5886
33	31.7164	30.5032	29.3556	28.2693	27.2414	26.2671	25.3437	24.4684	23.6374	22.8493	22.1003	21.3888	20.0689	18.8737
34	32.6373	31.3514	30.1371	28.9894	27.9051	26.8789	25.9078	24.9886	24.1173	23.292	22.5088	21.7658	20.3902	19.1478
35	33.5559	32.1954	30.9128	29.7024	28.5606	27.4817	26.4622	25.4986	24.5866	23.7239	22.9064	22.1318	20.7007	19.4114
36	34.4722	33.0352	31.6827	30.4083	29.208	28.0756	27.0071	25.9986	25.0456	24.1453	23.2933	22.4872	21.0007	19.6648

Periods	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%	9.00%	9.50%	10.00%	10.50%	11.00%
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1.9569	1.9524	1.9479	1.9434	1.939	1.9346	1.9302	1.9259	1.9217	1.9174	1.9132	1.9091	1.905	1.9009
3	2.8726	2.8594	2.8464	2.8334	2.8207	2.808	2.7955	2.7832	2.7712	2.7591	2.7472	2.7355	2.724	2.7125
4	3.7489	3.7232	3.698	3.673	3.6485	3.6243	3.6005	3.577	3.5541	3.5313	3.5089	3.4868	3.4652	3.4437
5	4.5875	4.5459	4.5052	4.4651	4.4258	4.3872	4.3493	4.312	4.2757	4.2397	4.2045	4.1698	4.1359	4.1024
6	5.39	5.3294	5.2703	5.2124	5.1557	5.1002	5.0459	4.9926	4.9407	4.8896	4.8397	4.7907	4.7429	4.6959
7	6.1579	6.0756	5.9955	5.9174	5.841	5.7665	5.6939	5.6228	5.5536	5.4859	5.4198	5.3552	5.2922	5.2305
8	6.8927	6.7863	6.6829	6.5825	6.4845	6.3892	6.2967	6.2063	6.1185	6.0329	5.9496	5.8684	5.7893	5.7122
9	7.5959	7.4631	7.3345	7.2099	7.0887	6.9712	6.8574	6.7466	6.6392	6.5348	6.4334	6.3349	6.2392	6.1461
10	8.2688	8.1077	7.9521	7.8018	7.6561	7.5151	7.379	7.2468	7.1191	6.9952	6.8752	6.759	6.6463	6.537
11	8.9127	8.7216	8.5375	8.3602	8.1888	8.0234	7.8642	7.71	7.5614	7.4176	7.2787	7.1445	7.0147	6.8892
12	9.5289	9.3063	9.0924	8.887	8.689	8.4985	8.3155	8.1389	7.969	7.8051	7.6472	7.495	7.3481	7.2065
13	10.1186	9.8631	9.6184	9.384	9.1587	8.9425	8.7354	8.536	8.3447	8.1606	7.9837	7.8136	7.6499	7.4923
14	10.6829	10.3934	10.117	9.8528	9.5997	9.3575	9.126	8.9037	8.691	8.4868	8.291	8.1033	7.923	7.7498
15	11.2229	10.8985	10.5896	10.2951	10.0138	9.7453	9.4893	9.2442	9.0101	8.786	8.5717	8.3666	8.1701	7.9818
16	11.7396	11.3795	11.0375	10.7124	10.4026	10.1077	9.8273	9.5594	9.3042	9.0605	8.828	8.606	8.3937	8.1908
17	12.2341	11.8376	11.4621	11.106	10.7677	10.4464	10.1417	9.8513	9.5753	9.3124	9.0621	8.8236	8.5961	8.3791
18	12.7073	12.2739	11.8645	11.4774	11.1105	10.763	10.4342	10.1216	9.8252	9.5435	9.2759	9.0214	8.7793	8.5487
19	13.1601	12.6894	12.246	11.8277	11.4324	11.0589	10.7062	10.3718	10.0555	9.7555	9.4711	9.2013	8.9451	8.7015
20	13.5934	13.0851	12.6076	12.1582	11.7346	11.3354	10.9593	10.6035	10.2677	9.95	9.6494	9.3648	9.0951	8.8392
21	14.008	13.462	12.9503	12.47	12.0184	11.5938	11.1947	10.818	10.4633	10.1284	9.8122	9.5134	9.2309	8.9632
22	14.4048	13.8209	13.2752	12.7642	12.2849	11.8353	11.4137	11.0167	10.6436	10.2921	9.9609	9.6485	9.3538	9.0749
23	14.7845	14.1627	13.5831	13.0417	12.5351	12.061	11.6174	11.2006	10.8098	10.4423	10.0967	9.7713	9.465	9.1756
24	15.1479	14.4883	13.875	13.3035	12.77	12.2719	11.8069	11.3709	10.9629	10.5801	10.2207	9.883	9.5656	9.2663
25	15.4956	14.7984	14.1517	13.5505	12.9906	12.469	11.9832	11.5286	11.1041	10.7065	10.334	9.9845	9.6567	9.348
26	15.8283	15.0937	14.4139	13.7835	13.1977	12.6532	12.1472	11.6746	11.2342	10.8225	10.4374	10.0768	9.7391	9.4216
27	16.1467	15.3749	14.6625	14.0033	13.3922	12.8254	12.2997	11.8098	11.3541	10.9289	10.5319	10.1607	9.8137	9.4879
28	16.4514	15.6427	14.8981	14.2107	13.5748	12.9863	12.4416	11.935	11.4646	11.0265	10.6182	10.237	9.8812	9.5476
29	16.743	15.8978	15.1214	14.4063	13.7463	13.1367	12.5736	12.0509	11.5665	11.116	10.697	10.3063	9.9423	9.6014
30	17.022	16.1407	15.3331	14.5909	13.9073	13.2773	12.6964	12.1582	11.6604	11.1982	10.7689	10.3693	9.9976	9.6499
31	17.289	16.3721	15.5337	14.765	14.0585	13.4087	12.8106	12.2576	11.7469	11.2736	10.8346	10.4266	10.0476	9.6936
32	17.5445	16.5925	15.7239	14.9293	14.2005	13.5315	12.9169	12.3496	11.8266	11.3427	10.8946	10.4787	10.0929	9.733
33	17.789	16.8024	15.9042	15.0843	14.3338	13.6462	13.0157	12.4348	11.9001	11.4061	10.9494	10.5261	10.1339	9.7685
34	18.023	17.0023	16.0751	15.2305	14.459	13.7534								

Future Value of \$1

Future value at the end of the designated period of investing \$1 at time 0 (the start of the first period), at the designated rate.

Periods	0.25%	0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.25%	2.50%	2.75%	3.00%	3.50%	4.00%
1	1.0025	1.005	1.0075	1.01	1.0125	1.015	1.0175	1.02	1.0225	1.025	1.0275	1.03	1.035	1.04
2	1.00501	1.01003	1.01506	1.0201	1.02516	1.03023	1.03531	1.0404	1.04551	1.05063	1.05576	1.0609	1.07123	1.0816
3	1.00752	1.01508	1.02267	1.0303	1.03797	1.04568	1.05342	1.06121	1.06903	1.07689	1.08479	1.09273	1.10872	1.12486
4	1.01004	1.02015	1.03034	1.0406	1.05095	1.06136	1.07186	1.08243	1.09308	1.10381	1.11462	1.12551	1.14752	1.16986
5	1.01256	1.02525	1.03807	1.05101	1.06408	1.07728	1.09062	1.10408	1.11768	1.13141	1.14527	1.15927	1.18769	1.21665
6	1.01509	1.03038	1.04585	1.06152	1.07738	1.09344	1.1097	1.12616	1.14283	1.15969	1.17677	1.19405	1.22926	1.26532
7	1.01763	1.03553	1.0537	1.07214	1.09085	1.10984	1.12912	1.14869	1.16854	1.18869	1.20913	1.22987	1.27228	1.31593
8	1.02018	1.04071	1.0616	1.08286	1.10449	1.12649	1.14888	1.17166	1.19483	1.2184	1.24238	1.26677	1.31681	1.36857
9	1.02273	1.04591	1.06956	1.09369	1.11829	1.14339	1.16899	1.19509	1.22171	1.24886	1.27655	1.30477	1.3629	1.42331
10	1.02528	1.05114	1.07758	1.10462	1.13227	1.16054	1.18944	1.21899	1.2492	1.28008	1.31165	1.34392	1.4106	1.48024
11	1.02785	1.0564	1.08566	1.11567	1.14642	1.17795	1.21026	1.24337	1.27731	1.31209	1.34772	1.38423	1.45997	1.53945
12	1.03042	1.06168	1.09381	1.12683	1.16075	1.19562	1.23144	1.26824	1.30605	1.34489	1.38478	1.42576	1.51107	1.60103
13	1.03299	1.06699	1.10201	1.13809	1.17526	1.21355	1.25299	1.29361	1.33544	1.37851	1.42287	1.46853	1.56396	1.66507
14	1.03557	1.07232	1.11028	1.14947	1.18995	1.23176	1.27492	1.31948	1.36548	1.41297	1.46199	1.51259	1.61869	1.73168
15	1.03816	1.07768	1.1186	1.16097	1.20483	1.25023	1.29723	1.34587	1.39621	1.4483	1.5022	1.55797	1.67535	1.80094
16	1.04076	1.08307	1.12699	1.17258	1.21989	1.26899	1.31993	1.37279	1.42762	1.48451	1.54351	1.60471	1.73399	1.87298
17	1.04336	1.08849	1.13544	1.1843	1.23514	1.28802	1.34303	1.40024	1.45974	1.52162	1.58596	1.65285	1.79468	1.9479
18	1.04597	1.09393	1.14396	1.19615	1.25058	1.30734	1.36653	1.42825	1.49259	1.55966	1.62957	1.70243	1.85749	2.02582
19	1.04858	1.0994	1.15254	1.20811	1.26621	1.32695	1.39045	1.45681	1.52617	1.59865	1.67438	1.75351	1.9225	2.10685
20	1.05121	1.1049	1.16118	1.22019	1.28204	1.34686	1.41478	1.48595	1.56051	1.63862	1.72043	1.80611	1.98979	2.19112
21	1.05383	1.11042	1.16989	1.23239	1.29806	1.36706	1.43954	1.51567	1.59562	1.67958	1.76774	1.86029	2.05943	2.27877
22	1.05647	1.11597	1.17867	1.24472	1.31429	1.38756	1.46473	1.54598	1.63152	1.72157	1.81635	1.9161	2.13151	2.36992
23	1.05911	1.12155	1.18751	1.25716	1.33072	1.40838	1.49036	1.5769	1.66823	1.76461	1.8663	1.97359	2.20611	2.46472
24	1.06176	1.12716	1.19641	1.26973	1.34735	1.4295	1.51644	1.60844	1.70577	1.80873	1.91763	2.03279	2.28333	2.5633
25	1.06441	1.1328	1.20539	1.28243	1.36419	1.45095	1.54298	1.64061	1.74415	1.85394	1.97036	2.09378	2.36324	2.66584
26	1.06707	1.13846	1.21443	1.29526	1.38125	1.47271	1.56998	1.67342	1.78339	1.90029	2.02455	2.15659	2.44596	2.77247
27	1.06974	1.14415	1.22354	1.30821	1.39851	1.4948	1.59746	1.70689	1.82352	1.9478	2.08022	2.22129	2.53157	2.88337
28	1.07241	1.14987	1.23271	1.32129	1.41599	1.51722	1.62541	1.74102	1.86454	1.9965	2.13743	2.28793	2.62017	2.9987
29	1.0751	1.15562	1.24196	1.3345	1.43369	1.53998	1.65386	1.77584	1.9065	2.04641	2.19621	2.35657	2.71188	3.11865
30	1.07778	1.1614	1.25127	1.34785	1.45161	1.56308	1.6828	1.81136	1.94939	2.09757	2.2566	2.42726	2.80679	3.2434
31	1.08048	1.16721	1.26066	1.36133	1.46976	1.58653	1.71225	1.84759	1.99325	2.15001	2.31866	2.50008	2.90503	3.37313
32	1.08318	1.17304	1.27011	1.37494	1.48813	1.61032	1.74221	1.88454	2.0381	2.20376	2.38242	2.57508	3.00671	3.58086
33	1.08589	1.17891	1.27964	1.38869	1.50673	1.63448	1.7727	1.92223	2.08396	2.25885	2.44794	2.65234	3.11194	3.64838
34	1.0886	1.1848	1.28923	1.40258	1.52557	1.659	1.80372	1.96068	2.13085	2.31532	2.51526	2.73191	3.22086	3.79432
35	1.09132	1.19073	1.2989	1.4166	1.54464	1.68388	1.83529	1.99989	2.17879	2.37321	2.58443	2.81386	3.33359	3.94609
36	1.09405	1.19668	1.30865	1.43077	1.56394	1.70914	1.86741	2.03989	2.22782	2.43254	2.6555	2.89828	3.45027	4.10393

Periods	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%	9.00%	9.50%	10.00%	10.50%	11.00%
1	1.045	1.05	1.055	1.06	1.065	1.07	1.075	1.08	1.085	1.09	1.095	1.1	1.105	1.11
2	1.09203	1.1025	1.11303	1.1236	1.13423	1.1449	1.15563	1.1664	1.17723	1.1881	1.19903	1.21	1.22103	1.2321
3	1.14117	1.15763	1.17424	1.19102	1.20795	1.22504	1.2423	1.25971	1.27729	1.29503	1.31293	1.331	1.34923	1.36763
4	1.19252	1.21551	1.23882	1.26248	1.28647	1.3108	1.33547	1.36049	1.38586	1.41158	1.43766	1.4641	1.4909	1.51807
5	1.24618	1.27628	1.30696	1.33823	1.37009	1.40255	1.43563	1.46933	1.50366	1.53862	1.57424	1.61051	1.64745	1.68506
6	1.30226	1.3401	1.37884	1.41852	1.45914	1.50073	1.5433	1.58687	1.63147	1.6771	1.72379	1.77156	1.82043	1.87041
7	1.36086	1.4071	1.45468	1.50363	1.55399	1.60578	1.65905	1.71382	1.77014	1.82804	1.88755	1.94872	2.01157	2.07616
8	1.4221	1.47746	1.53469	1.59385	1.655	1.71819	1.78348	1.85093	1.9206	1.99256	2.06687	2.14359	2.22279	2.30454
9	1.4861	1.55133	1.61909	1.68948	1.76257	1.83846	1.91724	1.999	2.08386	2.17189	2.26322	2.35795	2.45618	2.55804
10	1.55297	1.62889	1.70814	1.79085	1.87714	1.96715	2.06103	2.15892	2.26098	2.36736	2.47823	2.59374	2.71408	2.83942
11	1.62285	1.71034	1.80209	1.8983	1.99915	2.10485	2.21561	2.33164	2.45317	2.58043	2.71366	2.85312	2.99906	3.15176
12	1.69588	1.79586	1.90121	2.0122	2.1291	2.25219	2.38178	2.51817	2.66169	2.81266	2.97146	3.13843	3.31396	3.49845
13	1.7722	1.88565	2.00577	2.13293	2.26749	2.40985	2.56041	2.71962	2.88793	3.0658	3.25375	3.45227	3.66193	3.88328
14	1.85194	1.97993	2.11609	2.2609	2.41487	2.57853	2.75244	2.93719	3.1334	3.34173	3.56285	3.7975	4.04643	4.31044
15	1.93528	2.07893	2.23248	2.39656	2.57184	2.75903	2.95888	3.17217	3.39974	3.64248	3.90132	4.17725	4.4713	4.78459
16	2.02237	2.18287	2.35526	2.54035	2.73901	2.95216	3.18079	3.42594	3.68872	3.97031	4.27195	4.59497	4.94079	5.31089
17	2.11338	2.29202	2.4848	2.69277	2.91705	3.15882	3.41935	3.70002	4.00226	4.32763	4.67778	5.05447	5.45957	5.89509
18	2.20848	2.40662	2.62147	2.85434	3.10665	3.37993	3.6758	3.99602	4.34245	4.71712	5.12217	5.55992	6.03283	6.54355
19	2.30786	2.52695	2.76655	3.0256	3.30859	3.61653	3.95149	4.3157	4.71156	5.14166	5.60878	6.11591	6.66628	7.26334
20	2.41171	2.6533	2.91776	3.20714	3.52365	3.86968	4.24785	4.66096	5.11205	5.60441	6.14161	6.7275	7.36623	8.06231
21	2.52024	2.78596	3.07823	3.39956	3.75268	4.14056	4.56644	5.03383	5.54657	6.10881	6.72507	7.40025	8.13969	8.94917
22	2.63365	2.92526	3.24754	3.60354	3.99661	4.4304	4.90892	5.43654	6.01803	6.6586	7.36395	8.14027	8.99436	9.93357
23	2.75217	3.07152	3.42615	3.81975	4.25639	4.74053	5.27709	5.87146	6.52956	7.25787	8.06352	8.9543	9.93876	11.02627
24	2.87601	3.2251	3.61459	4.04893	4.53305	5.07237	5.67287	6.34118	7.08457	7.91108	8.82956	9.84973	10.98233	12.23916
25	3.00543	3.38635	3.81339	4.29187	4.8277	5.42743	6.09834	6.84848	7.68676	8.62308	9.66836	10.83471	12.13548	13.58546
26	3.14068	3.55567	4.02313	4.54938	5.1415	5.80735	6.55572	7.39635	8.34014	9.39916	10.58686	11.91818	13.40971	15.07986
27	3.28201	3.73346	4.2444	4.82235	5.4757	6.21387	7.04739	7.98806	9.04905	10.24508	11.59261	13.10999	14.81772	16.73865
28	3.4297	3.92013	4.47784	5.11169	5.83162	6.64884	7.57595	8.62711	9.81822	11.16714	12.69391	14.42099	16.37359	18.5799
29	3.58404	4.11614	4.72412	5.41839	6.21067	7.11426	8.14414	9.31727	10.65277	12.17218	13.89983	15.86309	18.09281	20.62369
30	3.74532	4.32194	4.98395	5.74349	6.61437	7.61226	8.75496	10.06266	11.55825	13.26768	15.22031	17.4494	19.99256	22.8923
31	3.91386	4.53804	5.25807	6.0881	7.0443	8.14511	9.41158	10.86767	12.5407					

Future Value of Annuity of Investing \$1 at the End of Each Period

Future value at the end of the designated period of investing \$1 at the end of each period, at the designated rate.
(Table values are the same as using Excel PV function with "type" set to 0)

Periods	0.25%	0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.25%	2.50%	2.75%	3.00%	3.50%	4.00%
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2.0025	2.005	2.0075	2.01	2.0125	2.015	2.0175	2.02	2.0225	2.025	2.0275	2.03	2.035	2.04
3	3.00751	3.01503	3.02256	3.0301	3.03766	3.04523	3.05281	3.0604	3.06801	3.07563	3.08326	3.0909	3.10623	3.1216
4	4.01503	4.03011	4.04523	4.0604	4.07563	4.09091	4.10623	4.12161	4.13704	4.15252	4.16805	4.18363	4.21495	4.24646
5	5.02507	5.05026	5.07557	5.101	5.12658	5.15227	5.17809	5.20404	5.23012	5.25633	5.28267	5.30914	5.36247	5.41632
6	6.03763	6.07551	6.11364	6.15201	6.19066	6.22955	6.26871	6.30812	6.3478	6.38774	6.42794	6.46841	6.55016	6.63297
7	7.05272	7.10589	7.15949	7.21353	7.26804	7.32299	7.37841	7.43428	7.49063	7.54743	7.60471	7.66246	7.77942	7.89829
8	8.07035	8.14142	8.21319	8.28567	8.35889	8.43283	8.50753	8.58297	8.65917	8.73612	8.81384	8.89233	9.0517	9.21422
9	9.09053	9.18213	9.27479	9.36853	9.46338	9.55932	9.65641	9.75463	9.854	9.95452	10.05622	10.1591	10.36851	10.58279
10	10.11326	10.22804	10.34435	10.46222	10.58167	10.70271	10.8254	10.94972	11.07571	11.20338	11.33277	11.46387	11.73141	12.0061
11	11.13854	11.27918	11.42193	11.56684	11.71394	11.86325	12.01484	12.16871	12.32491	12.48346	12.64442	12.80779	13.14201	13.48634
12	12.16639	12.33558	12.50759	12.68251	12.86036	13.0412	13.2251	13.41208	13.60222	13.79555	13.99214	14.19202	14.60198	15.02579
13	13.19681	13.39726	13.6014	13.80934	14.02111	14.23682	14.45654	14.68032	14.90827	15.14044	15.37692	15.61778	16.11305	16.62682
14	14.2298	14.46425	14.70341	14.94743	15.19637	15.45037	15.70953	15.97393	16.24371	16.51895	16.79979	17.08631	17.67701	18.29189
15	15.26537	15.53657	15.81369	16.0969	16.38632	16.68213	16.98445	17.29341	17.60919	17.93192	18.26178	18.5989	19.2957	20.02357
16	16.30353	16.61425	16.93229	17.25787	17.59115	17.93236	18.28168	18.63928	19.0054	19.38022	19.76398	20.15687	20.97105	21.82451
17	17.34429	17.69732	18.05928	18.43045	18.81104	19.20135	19.60161	20.01207	20.43302	20.86473	21.30749	21.76158	22.70504	23.69749
18	18.38765	18.78581	19.19472	19.61475	20.04618	20.48937	20.94464	21.41231	21.89276	22.38635	22.89345	23.41443	24.49972	25.64539
19	19.43362	19.87974	20.33868	20.81109	21.29676	21.79671	22.31117	22.84056	23.38535	23.94601	24.52302	25.11686	26.35721	27.67121
20	20.4822	20.97914	21.49122	22.01901	22.56297	23.12366	23.70162	24.29737	24.91152	25.54466	26.1974	26.87037	28.27971	29.77806
21	21.53341	22.08404	22.6524	23.2392	23.84501	24.47052	25.1164	25.78332	26.47203	27.18328	27.91783	28.67648	30.2695	31.96918
22	22.58724	23.19446	23.82229	24.47159	25.14307	25.83758	26.55594	27.29899	28.06765	28.86286	29.68557	30.53677	32.32893	34.24795
23	23.64371	24.31043	25.00096	25.71631	26.45736	27.22514	28.02067	28.84497	29.69917	30.58443	31.50192	32.45287	34.46044	36.61787
24	24.70282	25.43198	26.18847	26.97347	27.78808	28.63352	29.51103	30.42187	31.3674	32.34904	33.36822	34.42646	36.66655	39.08259
25	25.76458	26.55914	27.38488	28.2432	29.13543	30.06302	31.02747	32.03031	33.07317	34.15777	35.28585	36.45925	38.94988	41.64589
26	26.82899	27.69194	28.59027	29.52563	30.49962	31.51397	32.57045	33.67092	34.81732	36.01171	37.25621	38.55303	41.31312	44.31173
27	27.89606	28.8304	29.8047	30.82089	31.88087	32.98668	34.14043	35.34434	36.60071	37.912	39.28076	40.70962	43.75908	47.0842
28	28.9658	29.97455	31.02824	32.1291	33.27938	34.48148	35.73789	37.05123	38.42423	39.8598	41.36098	42.93091	46.29065	49.6757
29	30.03821	31.12442	32.26095	33.45039	34.69537	35.9987	37.3633	38.79225	40.28877	41.8563	43.49841	45.21884	48.91082	52.96627
30	31.11331	32.28004	33.50291	34.78489	36.12906	37.53868	39.01716	40.56809	42.19527	43.90271	45.69462	47.57541	51.6227	56.08492
31	32.19109	33.44144	34.75418	36.13274	37.58067	39.10176	40.69996	42.37945	44.14666	46.00028	47.95122	50.00267	54.42949	59.32832
32	33.27157	34.60865	36.01484	37.49407	39.05043	40.68829	42.41221	44.22704	46.13791	48.15029	50.26988	52.50275	57.33452	62.70145
33	34.35475	35.78169	37.28495	38.86901	40.53856	42.29861	44.15442	46.11158	48.17601	50.35405	52.6523	55.07783	60.34123	66.20951
34	35.44064	36.9606	38.56459	40.2577	42.04529	43.93309	45.92712	48.03381	50.25997	52.6129	55.10024	57.73017	63.45317	69.85789
35	36.52924	38.1454	39.85382	41.66028	43.57086	45.59209	47.73084	49.99449	52.39082	54.92822	57.6155	60.46208	66.67403	73.65221
36	37.62056	39.33613	41.15272	43.07688	45.1155	47.27597	49.56613	51.99438	54.56961	57.30143	60.19993	63.27594	70.00762	77.5983

Periods	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%	9.00%	9.50%	10.00%	10.50%	11.00%
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2.045	2.05	2.055	2.06	2.065	2.07	2.075	2.08	2.085	2.09	2.095	2.1	2.105	2.11
3	3.13703	3.1525	3.16803	3.1836	3.19923	3.2149	3.23063	3.2464	3.26223	3.2781	3.29403	3.31	3.32603	3.3421
4	4.2782	4.31013	4.34227	4.37462	4.40718	4.43994	4.47293	4.50611	4.53952	4.57313	4.60696	4.641	4.67526	4.70973
5	5.47072	5.52564	5.58109	5.6371	5.69365	5.75074	5.8084	5.8666	5.92538	5.98471	6.04462	6.1051	6.16616	6.2278
6	6.7169	6.80192	6.88805	6.97533	7.06374	7.15329	7.24403	7.33593	7.42904	7.52333	7.61886	7.71561	7.81361	7.91286
7	8.01916	8.14202	8.26689	8.39385	8.52288	8.65402	8.78733	8.9228	9.06051	9.20043	9.34265	9.48717	9.63404	9.78327
8	9.38002	9.54912	9.72157	9.89748	10.07687	10.2598	10.44638	10.63662	10.83065	11.02847	11.2302	11.43589	11.64561	11.85943
9	10.80212	11.02658	11.25626	11.49133	11.73187	11.97799	12.22986	12.48755	12.75125	13.02103	13.29707	13.57948	13.8684	14.16397
10	12.28822	12.57791	12.87535	13.18081	13.49444	13.81645	14.1471	14.48655	14.83511	15.19292	15.56029	15.93743	16.32458	16.72201
11	13.84119	14.2068	14.58349	14.97166	15.37158	15.78336	16.20813	16.64547	17.09609	17.56028	18.03852	18.53117	19.03866	19.56143
12	15.46404	15.91714	16.38558	16.86996	17.37073	17.88845	18.42374	18.97711	19.54926	20.14071	20.75218	21.38429	22.03772	22.71319
13	17.15992	17.713	18.28679	18.88216	19.49983	20.14064	20.80552	21.49528	22.21095	22.95337	23.72364	24.52272	25.35168	26.21164
14	18.93212	19.59865	20.29256	21.01509	21.76732	22.55049	23.36593	24.2149	25.09888	26.01917	26.97739	27.97499	29.01361	30.09492
15	20.78406	21.57858	22.40865	23.27599	24.18219	25.12902	26.11837	27.15209	28.23228	29.3609	30.54024	31.77249	33.06004	34.40536
16	22.71934	23.65714	24.64113	25.67255	26.75403	27.88805	29.07725	30.32426	31.63202	33.00338	34.44156	35.94974	37.53134	39.18995
17	24.74171	25.84038	26.99639	28.2129	29.49304	30.84021	32.25804	33.7502	35.32074	36.97369	38.71351	40.54471	42.47213	44.50084
18	26.85509	28.1324	29.48119	30.90567	32.41009	33.99003	35.67739	37.45022	39.323	41.30132	43.39129	45.59918	47.9317	50.39593
19	29.06357	30.53902	32.10266	33.76001	35.51674	37.37896	39.35319	41.44624	43.66545	46.01844	48.51346	51.1591	53.96453	56.93948
20	31.37143	33.06597	34.86831	36.78561	38.82533	40.99549	43.30468	45.76194	48.37701	51.1601	54.12224	57.27501	60.63081	64.20282
21	33.78314	35.71927	37.78607	39.99275	42.34898	44.86517	47.55253	50.4229	53.48906	56.76451	60.26385	64.00251	67.99704	72.26513
22	36.30338	38.50523	40.8643	43.39231	46.10166	49.00573	52.11897	55.45673	59.03563	62.87332	66.98892	71.40276	76.13673	81.2143
23	38.93703	41.43049	44.11184	46.99585	50.9827	53.43613	57.02789	60.89327	65.05366	69.53192	74.35287	79.54303	85.13109	91.14787
24	41.6892	44.70201	47.53799	50.8156	54.35466	58.17666	62.30498	66.76473	71.58322	76.78979	82.41639	88.49733	95.06985	102.1741
25	44.56521	47.72711	51.15258	54.86453	58.88771	63.24903	67.97785	73.10591	78.66779	84.70087	91.24595	98.34706	106.0522	114.4133
26	47.57064	51.11346	54.96597	59.1564	63.71541	68.67646	74.07619	79.95439	86.35455	93.32395	100.9143	109.1818	118.1877	127.9988
27	50.71132	54.66913	58.9891	63.70578	68.85691	74.48381	80.63191	87.35074	94.69469	102.7231	111.5012	121.1	131.5974	143.0786
28	53.99333	58.40259	63.2335	68.52813	74.33261	80.69768	87.6793	95.3388	103.7437	112.9682	123.			

Future Value of Annuity of Investing \$1 at the Start of Each Period

Future value at the end of the designated period of investing \$1 at the **start** of each period, at the designated rate.
(Table values are the same as using Excel PV function with "type" set to 1)

Periods	0.25%	0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.25%	2.50%	2.75%	3.00%	3.50%	4.00%
1	1.0025	1.005	1.0075	1.01	1.0125	1.015	1.0175	1.02	1.0225	1.025	1.0275	1.03	1.035	1.04
2	2.00751	2.01503	2.02256	2.0301	2.03766	2.04523	2.05281	2.0604	2.06801	2.07563	2.08326	2.0909	2.10623	2.1216
3	3.01503	3.03011	3.04523	3.0604	3.07563	3.09091	3.10623	3.12161	3.13704	3.15252	3.16805	3.18363	3.21495	3.24646
4	4.02507	4.05026	4.07557	4.101	4.12658	4.15227	4.17809	4.20404	4.23012	4.25633	4.28267	4.30914	4.36247	4.41632
5	5.03763	5.07551	5.11364	5.15201	5.19066	5.22955	5.26871	5.30812	5.3478	5.38774	5.42791	5.46841	5.55016	5.63297
6	6.05272	6.10589	6.15949	6.21353	6.26804	6.32299	6.37841	6.43428	6.49063	6.54743	6.60471	6.66246	6.77942	6.89829
7	7.07035	7.14142	7.21319	7.28567	7.35889	7.43283	7.50753	7.58297	7.65917	7.73612	7.81384	7.89233	8.0517	8.21422
8	8.09053	8.18213	8.27479	8.36853	8.46338	8.55932	8.65641	8.75463	8.854	8.95452	9.05622	9.1591	9.36851	9.58279
9	9.11326	9.22804	9.34435	9.46222	9.58167	9.70271	9.8254	9.94972	10.07571	10.20338	10.33277	10.46387	10.73141	11.0061
10	10.13854	10.27918	10.42193	10.56684	10.71394	10.86325	11.01484	11.16871	11.32491	11.48346	11.64442	11.80779	12.14201	12.48634
11	11.16639	11.33558	11.50759	11.68251	11.86036	12.0412	12.2251	12.41208	12.60222	12.79555	12.99214	13.19202	13.60198	14.02579
12	12.19681	12.39726	12.6014	12.80934	13.02111	13.23682	13.45654	13.68032	13.90827	14.14044	14.37692	14.61778	15.11305	15.62682
13	13.2298	13.46425	13.70341	13.94743	14.19637	14.45037	14.70953	14.97393	15.24371	15.51895	15.79979	16.08631	16.67701	17.29189
14	14.26537	14.53657	14.81369	15.0969	15.38632	15.68213	15.98445	16.29341	16.60919	16.93192	17.26178	17.5989	18.2957	19.02357
15	15.30353	15.61425	15.93229	16.25787	16.59115	16.93236	17.28168	17.63928	18.0054	18.38022	18.76398	19.15687	19.97105	20.82451
16	16.34429	16.69732	17.05928	17.43045	17.81104	18.20135	18.60161	19.01207	19.43302	19.86473	20.30749	20.76158	21.70504	22.69749
17	17.38765	17.78581	18.19472	18.61475	19.04618	19.48937	19.94464	20.41231	20.89276	21.38635	21.89345	22.41443	23.49972	24.64539
18	18.43362	18.87974	19.33868	19.8109	20.29676	20.79671	21.31117	21.84056	22.38535	22.94601	23.52302	24.11686	25.35721	26.67121
19	19.4822	19.97914	20.49122	21.01901	21.56297	22.12366	22.70162	23.29737	23.91152	24.54466	25.1974	25.87037	27.27971	28.77806
20	20.53341	21.08404	21.6524	22.2392	22.84501	23.47052	24.1164	24.78332	25.47203	26.18328	26.91783	27.67648	29.2695	30.96918
21	21.58724	22.19446	22.82229	23.47159	24.14307	24.83758	25.55594	26.29899	27.06765	27.86286	28.68557	29.53677	31.32893	33.24795
22	22.64371	23.31043	24.00096	24.71631	25.45736	26.22514	27.02067	27.84497	28.69917	29.58443	30.50192	31.45287	33.46044	35.61787
23	23.70282	24.43198	25.18847	25.97347	26.78808	27.63352	28.51103	29.42187	30.3674	31.34904	32.36822	33.42646	35.66655	38.08259
24	24.76458	25.55914	26.38488	27.2432	28.13543	29.06302	30.02747	31.03031	32.07317	33.15777	34.28585	35.45925	37.94988	40.64589
25	25.82899	26.69194	27.59027	28.52563	29.49962	30.51397	31.57045	32.67092	33.81732	35.01171	36.25621	37.55303	40.31312	43.31173
26	26.89606	27.8304	28.8047	29.82089	30.88087	31.98668	33.14043	34.34434	35.60071	36.912	38.28076	39.70962	42.75908	46.0842
27	27.9658	28.97455	30.02824	31.1291	32.27938	33.48148	34.73789	36.05123	37.42423	38.8598	40.36098	41.93091	45.29065	48.96757
28	29.03821	30.12442	31.26095	32.45039	33.69537	34.9987	36.3633	37.79225	39.28877	40.8563	42.49841	44.21884	47.91082	51.96627
29	30.11331	31.28004	32.50291	33.78489	35.12906	36.53868	38.01716	39.56809	41.19527	42.90271	44.69462	46.57541	50.6227	55.08492
30	31.19109	32.44144	33.75418	35.13274	36.58067	38.10176	39.69996	41.37945	43.14466	45.00028	46.95122	49.00267	53.42949	58.32832
31	32.27157	33.60865	35.01484	36.49407	38.05043	39.68829	41.41221	43.22704	45.13791	47.15029	49.26988	51.50275	56.33452	61.70145
32	33.35475	34.78169	36.28495	37.86901	39.53856	41.29861	43.15442	45.11158	47.17601	49.35405	51.6523	54.07783	59.34123	65.20951
33	34.44064	35.9606	37.56459	39.2577	41.04529	42.93309	44.92712	47.03381	49.25997	51.6129	54.10024	56.73017	62.45317	68.85789
34	35.52924	37.1454	38.85382	40.66028	42.57086	44.59209	46.73084	48.99449	51.39082	53.92822	56.6155	59.46208	65.67403	72.65221
35	36.62056	38.33613	40.15272	42.07688	44.1155	46.27597	48.56613	50.99438	53.56961	56.30143	59.19993	62.27594	69.00762	76.5983
36	37.71461	39.53281	41.46137	43.50765	45.67944	47.98511	50.43354	53.03427	55.79743	58.73397	61.85543	65.17422	72.45789	80.70223

Periods	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%	9.00%	9.50%	10.00%	10.50%	11.00%
1	1.045	1.05	1.055	1.06	1.065	1.07	1.075	1.08	1.085	1.09	1.095	1.1	1.105	1.11
2	2.13703	2.1525	2.16803	2.1836	2.19923	2.2149	2.23063	2.2464	2.26223	2.2781	2.29403	2.31	2.32603	2.3421
3	3.2782	3.31013	3.34227	3.37462	3.40718	3.43994	3.47293	3.50611	3.53952	3.57313	3.60696	3.641	3.67526	3.70973
4	4.47072	4.52564	4.58109	4.6371	4.69365	4.75074	4.8084	4.8666	4.92538	4.98471	5.04462	5.1051	5.16616	5.2278
5	5.7169	5.80192	5.88805	5.97533	6.06374	6.15329	6.24403	6.33593	6.42904	6.52333	6.61886	6.71561	6.81361	6.91286
6	7.01916	7.14202	7.26689	7.39385	7.52288	7.65402	7.78733	7.9228	8.06051	8.20043	8.34265	8.48717	8.63404	8.78327
7	8.38002	8.54912	8.72157	8.89748	9.07687	9.2598	9.44638	9.63662	9.83065	10.02847	10.2302	10.43589	10.64561	10.85943
8	9.80212	10.02658	10.25626	10.49133	10.73187	10.97799	11.22986	11.48755	11.75125	12.02103	12.29707	12.57948	12.8684	13.16397
9	11.28822	11.57791	11.87535	12.18081	12.49444	12.81645	13.1471	13.48655	13.83511	14.19292	14.56029	14.93743	15.32458	15.72201
10	12.84119	13.2068	13.58349	13.97166	14.37158	14.7836	15.20813	15.64547	16.09609	16.56028	17.03852	17.53117	18.03866	18.56143
11	14.46404	14.91714	15.38558	15.86996	16.37073	16.88845	17.42374	17.97711	18.54926	19.14071	19.75218	20.38429	21.03772	21.71319
12	16.15992	16.713	17.28679	17.88216	18.49983	19.14064	19.80552	20.49528	21.21095	21.95337	22.72364	23.52272	24.35168	25.21164
13	17.93212	18.59865	19.29256	20.01509	20.76732	21.55049	22.36593	23.2149	24.09888	25.01917	25.97739	26.97499	28.01361	29.09492
14	19.78406	20.57858	21.40865	22.27599	23.18219	24.12902	25.11837	26.15209	27.23228	28.3609	29.54024	30.77249	32.06004	33.40536
15	21.71934	22.65751	23.64113	24.67255	25.75403	26.88805	28.07725	29.32426	30.63202	32.00338	33.44156	34.94974	36.53134	38.18995
16	23.74171	24.84038	25.99639	27.2129	28.49304	29.84021	31.25804	32.7502	34.32074	35.97369	37.71351	39.54471	41.47213	43.50084
17	25.85509	27.1324	28.48119	29.90567	31.41009	32.99903	34.67739	36.45022	38.323	40.30132	42.39129	44.59918	46.9317	49.39593
18	28.06357	29.53902	31.10266	32.76001	34.51674	36.37896	38.35319	40.44624	42.66545	45.01844	47.51346	50.1591	52.96453	55.93948
19	30.37143	32.06597	33.86831	35.78561	37.82533	39.99549	42.30468	44.76194	47.37701	50.1601	53.12224	56.27501	59.63081	63.20282
20	32.78314	34.71927	36.78607	38.99275	41.34898	43.86517	46.55253	49.42129	52.48906	55.76451	59.26385	63.00251	66.99704	71.26513
21	35.30338	37.50523	39.8643	42.39231	45.10166	48.00573	51.11897	54.45673	58.03563	61.87332	65.98892	70.40276	75.13673	80.2143
22	37.93703	40.43049	43.11184	45.99585	49.09827	52.43613	56.02789	59.89327	64.05366	68.53192	73.35287	78.54303	84.13109	90.14787
23	40.6892	43.50201	46.53799	49.8156	53.35466	57.17666	61.30498	65.76473	70.58322	75.78979	81.41639	87.49733	94.06985	101.1741
24	43.56521	46.72711	50.15258	53.86453	57.88771	62.24903	66.97785	72.10591	77.66779	83.70087	90.24595	97.34706	105.0522	113.4133
25	46.57064	50.11346	53.96597	58.1564	62.71541	67.67646	73.07619	78.95439	85.35455	92.32395	99.91431	108.1818	117.1877	126.9988
26	49.71132	53.66913	57.9891	62.70578	67.85691	73.48381	79.63191	86.35074	93.69469	101.7231	110.5012	120.1	130.5974	142.0786
27	52.99333	57.40259	62.2335	67.52813	73.33261	79.69768	86.6793	94.3388	102.7437	111.9682	122.0938			