

Compound Interest Example 02

Principal	\$ 80,000
Annual interest rate	6%

Date borrowed January 1, 2006

Annual Compounding

Year	Principal	Annual interest rate	Interest expense		Cumulative interest	Principal + Cumulative interest
2006	\$ 80,000	6%	\$ 4,800	(*1)	\$ 4,800	\$ 84,800
2007	\$ 80,000	6%	\$ 5,088	(*2)	\$ 9,888	\$ 89,888
2008	\$ 80,000	6%	\$ 5,393	(*3)	\$ 15,281	\$ 95,281

(*1) $\$80,000 \times 6\%$

(*2) $(\$80,000 + \$4,800) \times 6\%$

(*3) $(\$80,000 + \$4,800 + \$5,088) \times 6\%$

Semi-annual Compounding

Year	Principal	Annual interest rate	Interest expense		Cumulative interest	Principal + Cumulative interest
1/1-6/30, 2006	\$ 80,000	3%	\$ 2,400	(*4)	\$ 2,400	\$ 82,400
7/1-12/31, 2006	\$ 80,000	3%	\$ 2,472	(*5)	\$ 4,872	\$ 84,872
1/1-6/30, 2007	\$ 80,000	3%	\$ 2,546	(*6)	\$ 7,418	\$ 87,418
7/1-12/31, 2007	\$ 80,000	3%	\$ 2,623		\$ 10,041	\$ 90,041
1/1-6/30, 2008	\$ 80,000	3%	\$ 2,701		\$ 12,742	\$ 92,742
7/1-12/31, 2008	\$ 80,000	3%	\$ 2,782		\$ 15,524	\$ 95,524

(*4) $\$80,000 \times 3\%$

(*5) $(\$80,000 + \$2,400) \times 3\%$

(*6) $(\$80,000 + \$2,400 + \$2,472) \times 3\%$

Quarterly Compounding

Year	Principal	Annual interest rate	Interest expense		Cumulative interest	Principal + Cumulative interest
Q1, 2006	\$ 80,000	1.5%	\$ 1,200	(*7)	\$ 1,200	\$ 81,200
Q2, 2006	\$ 80,000	1.5%	\$ 1,218	(*8)	\$ 2,418	\$ 82,418
Q3, 2006	\$ 80,000	1.5%	\$ 1,236	(*9)	\$ 3,654	\$ 83,654
Q4, 2006	\$ 80,000	1.5%	\$ 1,255		\$ 4,909	\$ 84,909
Q1, 2007	\$ 80,000	1.5%	\$ 1,274		\$ 6,183	\$ 86,183
Q2, 2007	\$ 80,000	1.5%	\$ 1,293		\$ 7,475	\$ 87,475
Q3, 2007	\$ 80,000	1.5%	\$ 1,312		\$ 8,788	\$ 88,788
Q4, 2007	\$ 80,000	1.5%	\$ 1,332		\$ 10,119	\$ 90,119
Q1, 2008	\$ 80,000	1.5%	\$ 1,352		\$ 11,471	\$ 91,471
Q2, 2008	\$ 80,000	1.5%	\$ 1,372		\$ 12,843	\$ 92,843
Q3, 2008	\$ 80,000	1.5%	\$ 1,393		\$ 14,236	\$ 94,236
Q4, 2008	\$ 80,000	1.5%	\$ 1,414		\$ 15,649	\$ 95,649

(*7) $\$80,000 \times 1.5\%$

(*8) $(\$80,000 + \$1,200) \times 1.5\%$

(*9) $(\$80,000 + \$1,200 + \$1,218) \times 1.5\%$