

Interest Calculations Example 1a

| | |
|----------------------|----------------------|
| Principal | \$ 200,000 |
| Annual interest rate | 10% |
| Date borrowed | April 1, 2006 |

Simple interest method

| Year | Principal | Annual interest rate | No. of months | Interest expense | | Cumulative interest | Principal + Cumulative interest |
|------|------------|----------------------|---------------|------------------|------|---------------------|---------------------------------|
| 2006 | \$ 200,000 | 10% | 9 | \$ 15,000 | (*1) | \$ 15,000 | \$ 215,000 |
| 2007 | \$ 200,000 | 10% | 12 | \$ 20,000 | (*2) | \$ 35,000 | \$ 235,000 |
| 2008 | \$ 200,000 | 10% | 12 | \$ 20,000 | (*2) | \$ 55,000 | \$ 255,000 |
| 2009 | \$ 200,000 | 10% | 12 | \$ 20,000 | (*2) | \$ 75,000 | \$ 275,000 |
| 2010 | \$ 200,000 | 10% | 12 | \$ 20,000 | (*2) | \$ 95,000 | \$ 295,000 |

(*1) $\$200,000 \times 10\% \times (9/12) = \$15,000$

(*2) $\$200,000 \times 10\% \times (12/12) = \$20,000$

Compound interest method

| Year | Principal | Annual interest rate | No. of months | Interest expense | | Cumulative interest | Principal + Cumulative interest |
|------|------------|----------------------|---------------|------------------|------|---------------------|---------------------------------|
| 2006 | \$ 200,000 | 10% | 9 | \$ 15,000 | (*3) | \$ 15,000 | \$ 215,000 |
| 2007 | \$ 200,000 | 10% | 12 | \$ 21,500 | (*4) | \$ 36,500 | \$ 236,500 |
| 2008 | \$ 200,000 | 10% | 12 | \$ 23,650 | (*5) | \$ 60,150 | \$ 260,150 |
| 2009 | \$ 200,000 | 10% | 12 | \$ 26,015 | (*6) | \$ 86,165 | \$ 286,165 |
| 2010 | \$ 200,000 | 10% | 12 | \$ 28,617 | (*7) | \$ 114,782 | \$ 314,782 |

(*3) $\$200,000 \times 10\% \times (9/12) = \$15,000$

(*4) $(\$200,000 + \$15,000) \times 10\% \times (12/12) = \$21,500$

(*5) $(\$200,000 + \$15,000 + \$21,500) \times 10\% \times (12/12) = \$23,650$

(*6) $(\$200,000 + \$15,000 + \$21,500 + \$23,650) \times 10\% \times (12/12) = \$26,015$

(*7) $(\$200,000 + \$15,000 + \$21,500 + \$23,650 + 26,015) \times 10\% \times (12/12) = \$28,617$