# *Chapter 6 Reference Sheet*

## Simple Interest: $I = Prt$ $A = P + I$

**A = future value**

**P = principal**

**I = interest earned**

**r = annual interest rate**

**t = term length in years**

## Compound Interest: $A = P\left(1 + \frac{r}{n}\right)^{nt}$ $I = A - P$

**A = future value**

**P = principal**

**I = interest earned**

**r = annual interest rate**

**t = term length in years**

**n = compounding frequency**

**Compounding frequencies:**
annually = 1
semi-annually = 2
quarterly = 4
monthly = 12
daily = 365

**Rule of 72 (interest must be compounded annually):**

Years to double investment = 72 ÷ (interest rate as a percent)

**Interest on a credit card balance: I = Prt**
(outstanding balance) x (interest rate as a percent) x (# of years)
(outstanding balance) x (interest rate as a percent) x (# of **days ÷ 365**)
**P** **r** **t**

# *Chapter 6 Reference Sheet*

**How many days are in each month:**

31 – January, March, May, July, August, October, December

30 – April, June, September, November

28 – February

**Short term loans:** $I = Prt$ $A = P + I$ $I = A - P$

**A = total repayment amount**

**P = principal**

**I = interest charged**

**r = annual interest rate** **or** **r = daily interest rate**

**t = term length in years** **or** **t = term length in days**

**Annual interest rate = daily interest rate x 365**

**Daily interest rate = annual interest rate ÷ 365**

**Monthly loan repayment:** $A = M \times (\#of\ months)$ $A = M \times t \times 12$ $I = A - P$

**A = total repayment amount**

**P = principal**

**M = monthly payment amount** *(found using the table on page 320)*

**I = interest charged (also called finance charge)**

**t = term length in years (also called amortization period)**

## *Chapter 6 Reference Sheet*

| PERSONAL LOAN PAYMENT CALCULATOR: MONTHLY PAYMENT PER $1000.00 BORROWED (INTEREST COMPOUNDED MONTHLY) | | | | | |
|---|---|---|---|---|---|
| *Interest rate (%)* | *Term in years* | | | | |
| | **1** | **2** | **3** | **4** | **5** |
| 3.00 | 84.69 | 42.98 | 29.08 | 22.13 | 17.97 |
| 3.25 | 84.81 | 43.09 | 29.19 | 22.24 | 18.08 |
| 3.50 | 84.92 | 43.20 | 29.30 | 22.36 | 18.19 |
| 3.75 | 85.04 | 43.31 | 29.41 | 22.47 | 18.30 |
| 4.00 | 85.15 | 43.42 | 29.52 | 22.58 | 18.42 |
| 4.25 | 85.26 | 43.54 | 29.64 | 22.69 | 18.53 |
| 4.50 | 85.38 | 43.65 | 29.75 | 22.80 | 18.64 |
| 4.75 | 85.49 | 43.76 | 29.86 | 22.92 | 18.76 |
| 5.00 | 85.61 | 43.87 | 29.97 | 23.03 | 18.87 |
| 5.25 | 85.72 | 43.98 | 30.08 | 23.14 | 18.99 |
| 5.50 | 85.84 | 44.10 | 30.20 | 23.26 | 19.10 |
| 5.75 | 85.95 | 44.21 | 30.31 | 23.37 | 19.22 |
| 6.00 | 86.07 | 44.32 | 30.42 | 23.49 | 19.33 |
| 6.25 | 86.18 | 44.43 | 30.54 | 23.60 | 19.45 |
| 6.50 | 86.30 | 44.55 | 30.65 | 23.71 | 19.57 |
| 6.75 | 86.41 | 44.66 | 30.76 | 23.83 | 19.68 |
| 7.00 | 86.53 | 44.77 | 30.88 | 23.95 | 19.80 |
| 7.25 | 86.64 | 44.89 | 30.99 | 24.06 | 19.92 |
| 7.50 | 86.76 | 45.00 | 31.11 | 24.18 | 20.04 |
| 7.75 | 86.87 | 45.11 | 31.22 | 24.29 | 20.16 |
| 8.00 | 86.99 | 45.23 | 31.34 | 24.41 | 20.28 |
| 8.25 | 87.10 | 45.34 | 31.45 | 24.53 | 20.40 |
| 8.50 | 87.22 | 45.46 | 31.57 | 24.65 | 20.52 |
| 8.75 | 87.34 | 45.57 | 31.68 | 24.77 | 20.64 |
| 9.00 | 87.45 | 45.68 | 31.80 | 24.89 | 20.76 |
| 9.25 | 87.57 | 45.80 | 31.92 | 25.00 | 20.88 |
| 9.50 | 87.68 | 45.91 | 32.03 | 25.12 | 21.00 |
| 9.75 | 87.80 | 46.03 | 32.15 | 25.24 | 21.12 |
| 10.00 | 87.92 | 46.14 | 32.27 | 25.36 | 21.25 |

**(1) Look up the interest rate in the left-hand column**

**(2) Look at the entry in the column under the length of the term in the problem**

**(3) Divide the amount of the loan by 1000**

**(4) Multiply the amount from step 3 from the table entry number found in step 2**