

Annual Percentage Rate

Interest that is calculated only on the principal is **simple interest**. The rate at which this interest is calculated is the **annual percentage rate** (APR). Interest that is calculated on both the principal *and* accumulated interest is called compound interest, which is discussed in Section 6.2.

Study Tip

When a term is given in days, you can convert it to years by dividing by 365. For example,

$$60 \text{ days} = \frac{60}{365} \text{ year.}$$

Simple Interest Formula ($I = Prt$)

$$\begin{matrix} \text{Interest} & = & \text{Principal} & \cdot & \text{Annual percentage} & \cdot & \text{Time} \\ (\$) & & (\$) & & \text{rate (in decimal form)} & & (\text{yr}) \\ I & = & P & \cdot & r & \cdot & t \end{matrix}$$

EXAMPLE 5 Finding Simple Interest

Complete the table showing the interest on \$1000 for various terms and rates.

$t \backslash r$	4%	8%	12%	16%	20%	24%
60 days						
120 days						
180 days						
240 days						
300 days						
1 year						

SOLUTION

Use a spreadsheet for this type of repetitive calculation.

DATA		A	B	C	D	E	F	G
1		Rate						
2	Days	4%	8%	12%	16%	20%	24%	
3	60	\$6.58	\$13.15	\$19.73	\$26.30	\$32.88	\$39.45	
4	120	\$13.15	\$26.30	\$39.45	\$52.60	\$65.75	\$78.90	
5	180	\$19.73	\$39.45	\$59.18	\$78.90	\$98.63	\$118.36	
6	240	\$26.30	\$52.60	\$78.90	\$105.21	\$131.51	\$157.81	
7	300	\$32.88	\$65.75	\$98.63	\$131.51	\$164.38	\$197.26	
8	365	\$40.00	\$80.00	\$120.00	\$160.00	\$200.00	\$240.00	

$$\begin{aligned} I &= Prt \\ &= 1000(0.04)\left(\frac{60}{365}\right) \\ &= \$6.58 \end{aligned}$$

✓ Checkpoint

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Complete another row in the table for a term of 90 days.