

1. Lupe invests \$7000 at 8% simple interest. How much will he have after 3 years?

$\begin{matrix} \uparrow & \uparrow & \uparrow \\ P & r & t \end{matrix}$

$$\begin{aligned}
 I &= Prt \\
 &= (7000)(0.08)(3) \\
 &= 1680
 \end{aligned}$$

$$\begin{aligned}
 \text{Final balance} &= \$7000 + \$1680 \\
 &= \boxed{\$8680}
 \end{aligned}$$

2. Calculate the final balance of \$3000 invested at 7% interest compounded semiannually for 5 years.

$\begin{matrix} \swarrow P & \swarrow r & \swarrow n=2 & \swarrow t \end{matrix}$

$$\begin{aligned}
 B &= P \left(1 + \frac{r}{n}\right)^{nt} \\
 &= (3000) \left(1 + \frac{0.07}{2}\right)^{(2)(5)} \\
 &= (3000) (1 + 0.035)^{10} \\
 &= (3000) (1.035)^{10} \\
 &\approx (3000) (1.41059876) \\
 &= \boxed{\$4231.80}
 \end{aligned}$$

Q: A boy was at a carnival and went to a booth where a man said to the boy, "If I write your exact weight on this piece of paper then you have to give me \$50, but if I cannot, I will pay you \$50." The boy looked around and saw no scale so he agreed, thinking no matter what the man writes he'll just say he weighs more or less. In the end the boy ended up paying the man \$50. How did the man win the bet?