Simple and Compound Interest

Vocabulary

Principal	Base amount of money
Interest	Percent of the whole; amount charged on principal or earned on principal
Interest rate	Percentage rate charged or earned

$$Interest = \frac{r}{100} \bullet principal$$

If you borrow $3,500 for one year with an interest rate of 7 ½ %, what is the amount of interest you must pay?

Set up: $I = \frac{7.5}{100} \bullet 3500 \qquad I = 262.50$

If you will be charged interest of $3,600 in one year on a loan with a rate of 4.5%, how much is the loan?

Set up: $\frac{4.5}{100} = \frac{3600}{P} \qquad P = 80000$

If you will earn interest of $56.25 on a savings account for one year that had a constant balance of $4500, what was the interest rate?

Set up: $\frac{r}{100} = \frac{56.25}{4500} \qquad r = 1.25 \qquad R = 1.25\%$

TRY: Set up each problem and solve it.

A savings bank offers 5.25% on 1-year time deposits. If you place $3,000 in an account, how much will you have at the end of the year?

If you will be charged interest of $1,800 in one year on a loan with a rate of 4.5%, how much is the loan?

If you will earn interest of $56.25 on a savings account for one year that had a constant balance of $2500, what was the interest rate?

If $500 is compounded at 8% for 3 years, what will the final total be?
(Hint: find the interest for the first year. Add that to the $500. Find the interest for the 2nd year. Add that. Now find the interest for the 3rd year. Add that. Round your final answer to the nearest penny.)