Warm-Up

1) Find the percent of increase/decrease when you have 68 markers on the first day of school and by the midterm you have 43 markers to the nearest whole percent.

2) How much do you owe RIC if you borrowed $13,000 at 5% for the 4 years you attended?

3) How long did you invest $2540 at 6.2% if you earned $1260 in interest? Round to nearest whole year.

$I = p \cdot r \cdot t$

$1260 = (2540)(0.062) \cdot t$

$\frac{1260}{157.48} = \frac{157.48 \cdot t}{157.48}$

$15748 \overline{)126000.}$

$t = 8$ yrs

6.8 Compound Interest-Quick One Day Treat

What does compound mean?

↳ builds/earns interest on interest...

Formula- $I = p \cdot r \cdot t$

Concept

Year 1 $(\$1000)(0.05)(1) = \$50$

Add the interest to the \$1000 to find the amount in your account at the end of the first year. $1000 + $50 = **$1050**
The interest for the second year is found on \$1050; that is, the interest is **compounded.**

Year 2 **($1050)**(0.05)(1) = $52.50

Add this interest to the \$1050 to find the amount in your account at the end of the second year. **$1050** + $52.50 = $1102.50.
The interest for the third year is found on \$1102.50.

Year 3 $(\$1102.50)(0.05)(1) \approx \$55.13$

Add this interest to the \$1102.50. $1102.50 + $55.13 = **$1157.63**

If you earned simple interest, what would you have earned?

$I = p \cdot r \cdot t$
$I = (1000)(0.05)(3)$
$I = 150$

Ex 1 Find the compounded amount (method 1, steps)

Nancy deposits $3400 into an account that pays 6% interest compounded annually for 4 years. Find the compounded amount?

Year 1 $(3400)(0.06)(1)$
204

Year 2 $(3604)(0.06)(1)$
216.24

Year 3 $(3820.24)(0.06)(1)$
229.21

Year 4 $(4049.45)(0.06)(1)$
242.97

At the end of 4 yrs Nancy has $4292.42

Ex 2 Find the compounded amount (method 2, multiplication)

Still consider Nancy's situation.

$(3400)(1+0.06)$
$(3400)(1.06)(1.06)(1.06)(1.06)$
$(3400)(1.06)^4 = \$4292.42$

Ex 3 Find the compounded amount and interest

$1000 at 5.5% interest for 12 years

$$(1000)(1.055)^{12}$$

Comp Amt $1901.21

Interest $1901.21 - 1000.00 = 901.21$