Context, review: Make sure to show your work.

(a) $100 earns 2.4% compound interest annually. What is the value after 5 years?

- P =

- F = ?

- p = _____ (per _____)

- T = _____ (_____)

- $F = P(1+p)^T =$

(b) $100 earns 2.4% compound interest annually the first two years, then 2.1% compound interest annually the next three years. What is the value after 5 years?

Can you solve this using simple interest year-to-year?

Main activity: Make sure to show your formulas.

(a) Calculate using year-by-year simple interest: $100 earns 2.4% compound interest annually the first two years, then you deposit another $100, then 2.4% compound interest annually the next three years. What is the value after 5 years?

(b) Calculate using compound interest: $100 savings account earning 2.4% compound interest annually for five years, and additional account earning 2.4% compound interest annually with nothing in it for two years, then $100 added, so that it earns interest for the last three years.

(c) Notice how the same financial transaction can be viewed different ways. Which way was easiest to understand? Which way was easist to calculate?

Simple interest: you pay back interest each month, pay back the original later

Compound interest: you don't pay back anything until the end.

Amortized loan: you pay back the same amount each month, until it is done.

Introduction to (short) installment loans

Calculate the amount owed at the end of each month:
You borrow $100 originally at 10% per month interest, and pay back $22.96 at the end of each month.
(a) At the end of the first month, you owe 110% of the original, but you pay back $22.96, so you only owe:

(b) At the end of the second month, you owe 110% of the answer from part (a), but you pay back $22.96, so you only owe:

(c) At the end of the third month, after payment, you owe:

(d) At the end of the fourth month, after payment, you owe:

(e) At the end of the fifth month, after payment, you owe:

(f) At the end of the sixth month, after payment, you owe: