Unit 5 Lesson 16: Compounding Interest

1 Five Years Later (Warm up)

Student Task Statement

You owe 12% interest each year on a $500 loan. If you make no payments and take no additional loans, what will the loan balance be after 5 years?

Write an expression to represent the balance and evaluate it to find the answer in dollars.

2 Resizing Images
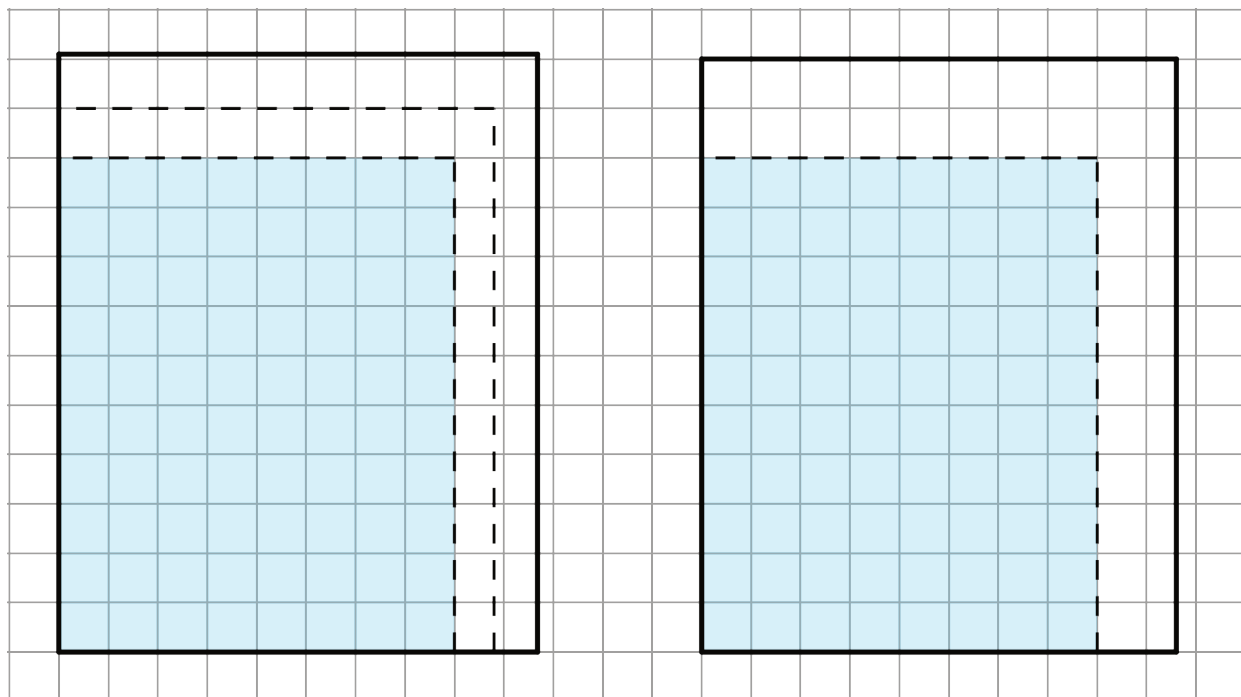
Student Task Statement

Andre and Mai need to enlarge two images for a group project. The two images are the same size.

Andre makes a scaled copy of his image, increasing the lengths by 10%. It was still a little too small, so he increases the lengths by 10% again.

Mai says, "If I scale my image and increase the lengths by 20%, our images will be exactly the same size."

Do you agree with Mai? Explain or show your reasoning.

Activity Synthesis

Andre
10% increase twice

Mai
20% increase once

3 Earning Interest

Student Task Statement

A bank account has a monthly interest rate of 1% and initial balance of $1,000. Any earned interest is added to the account and no other deposits or withdrawals are made.

1. What is the account balance after 6 months, 1 year, 2 years, and 5 years? Show your reasoning.

2. Write an equation expressing the account balance (a) in terms of the number of months (m). Assume that all interest earned continues to be added to the account and no other deposits or withdrawals are made.

3. How much interest will the account earn in 1 year? What percentage of the initial balance is that? Show your reasoning.

4. The term annual return refers to the percent of interest an account holder could expect to receive in one year. Discuss with your partner: If you were the bank, would you advertise the account as having a 12% annual return? Why or why not? Use your work so far to explain your reasoning.