Lesson 1 Practice Problems

1. Which expression equals 2^7?

   A. $2 + 2 + 2 + 2 + 2 + 2 + 2$

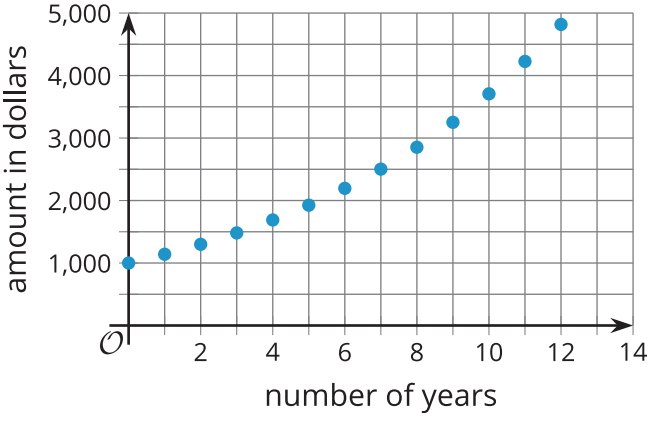
   B. $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

   C. $2 \cdot 7$

   D. $2 + 7$

2. Evaluate the expression $3 \cdot 5^x$ when x is 2.

3. The graph shows the yearly balance, in dollars, in an investment account.



   a. What is the initial balance in the account?

   b. Is the account growing by the same number of dollars each year? Explain how you know.

   c. A second investment account starts with $2,000 and grows by $150 each year. Sketch the values of this account on the graph.

   d. How does the growth of balances in the two account balances compare?

4. Jada rewrites $5 \cdot 3^x$ as $15x$. Do you agree with Jada that these are equivalent expressions? Explain your reasoning.

5. Investment account 1 starts with a balance of $200 and doubles every year. Investment account 2 starts with $1,000 and increases by $100 each year.

   a. How long does it take for each account to double?

   b. How long does it take for each account to double again?

   c. How does the growth in these two accounts compare? Explain your reasoning.

6. A study of 100 recent high school graduates investigates a link between their childhood reading habits and achievement in high school.

   Participants are asked if they read books every night with another person when they were ages 2 to 5, as well as their grade average for all of their high school classes. The results are represented in the table.

	read books nightly	did not read books nightly
A average	16	10
B average	21	14
C average	12	16
D average	3	8

   a. What does the 21 in the table represent?

   b. What does the 10 in the table represent?

(From Unit 3, Lesson 1.)

7. Lin says that a snack machine is like a function because it outputs an item for each code input. Explain why Lin is correct.

   (From Unit 4, Lesson 1.)

8. At a gas station, a gallon of gasoline costs $3.50. The relationship between the dollar cost of gasoline and the gallons purchased can be described with a function.

   a. Identify the input variable and the output variable in this function.

   b. Describe the function with a sentence of the form "_____ is a function of _____."

   c. Identify an input-output pair of the function and explain its meaning in this situation.

   (From Unit 4, Lesson 1.)