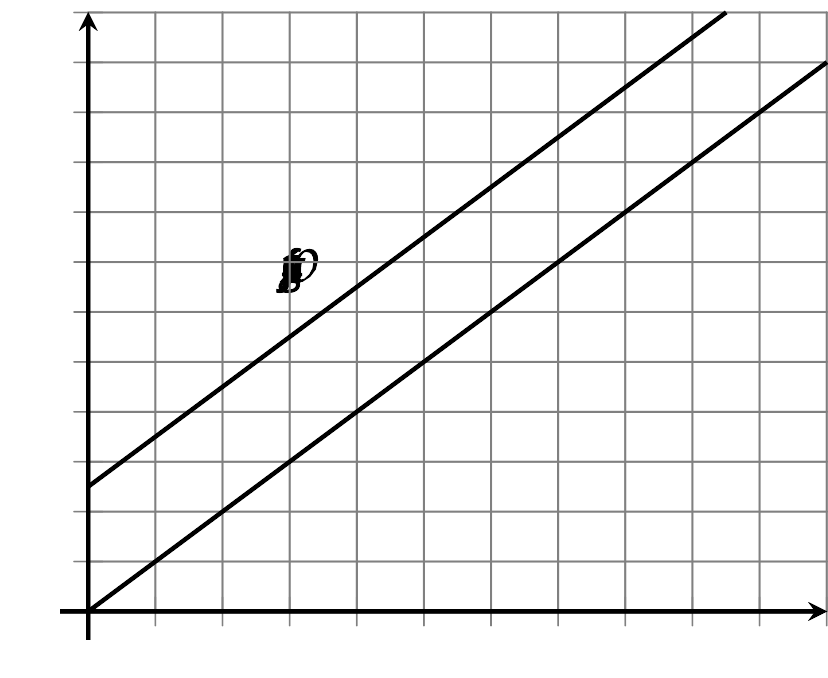
### Lesson 20 Practice Problems

1. Whenever the input of a function increases by 1, the output increases by 5. Which of these equations could define ?
2. The function is defined by . Which of the following statements is true about the values of ? Select **all** that apply.
   1. When the input increases by 1, the value of increases by 2.
   2. When the input increases by 1, the value of increases by a factor of 2.
   3. When the input increases by 3, the value of increases by 8.
   4. When the input increases by 3, the value of increases by a factor of 8.
   5. When the input increases by 4, the value of increases by a factor of 4.
3. The two lines on the coordinate plane are graphs of functions and .
   1. Use the graph to explain why the value of increases by 2 each time the input increases by 1.
   2. Use the graph to explain why the value of increases by 2 each time the input increases by 1.

* 
* ​​​​​​

1. The function is given by .
   1. Find the quotient .
   2. What does this tell you about how the value of changes when the input is increased by 2?
   3. Find the quotient .
   4. What does this tell you about how the value of changes when the input is increased by 3?
2. For each of the functions and , the domain is . For which functions is the average rate of change a good measure of how the function changes for this domain? Select **all** that apply.

* (From Unit 5, Lesson 10.)

1. The average price of a gallon of regular gasoline in 2016 was $2.14. In 2017, the average price was $2.42 a gallon—an increase of 13%.

* At that rate, what will the average price of gasoline be in 2020?
* (From Unit 5, Lesson 16.)

1. A credit card charges a 14% annual nominal interest rate and has a balance of $500.

* If no payments are made and interest is compounded quarterly, which expression could be used to calculate the account balance, in dollars, in 3 years?
* (From Unit 5, Lesson 17.)

1. Here are equations that define four linear functions. For each function, write a verbal description of what is done to the input to get the output, and then write the inverse function.

* (From Unit 4, Lesson 17.)



© CC BY 2019 by Illustrative Mathematics®