

Lesson: A Review of Inverse Functions

What is a one-to-one function?

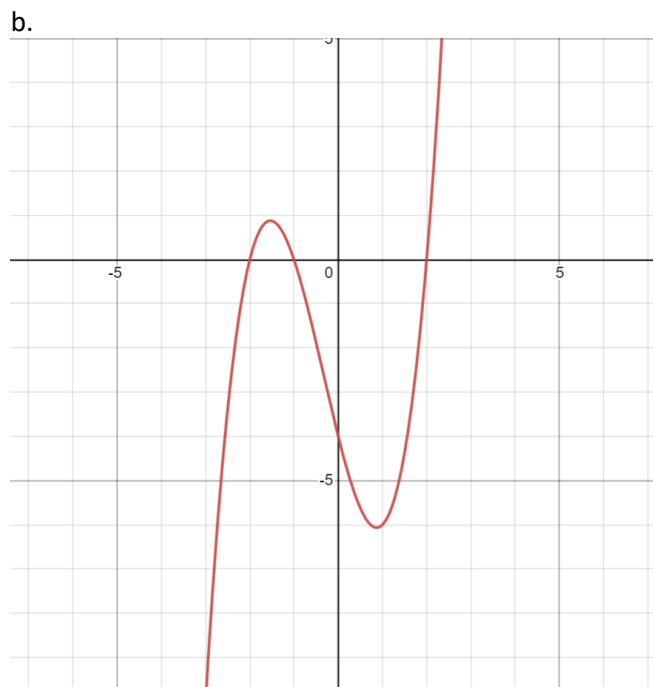
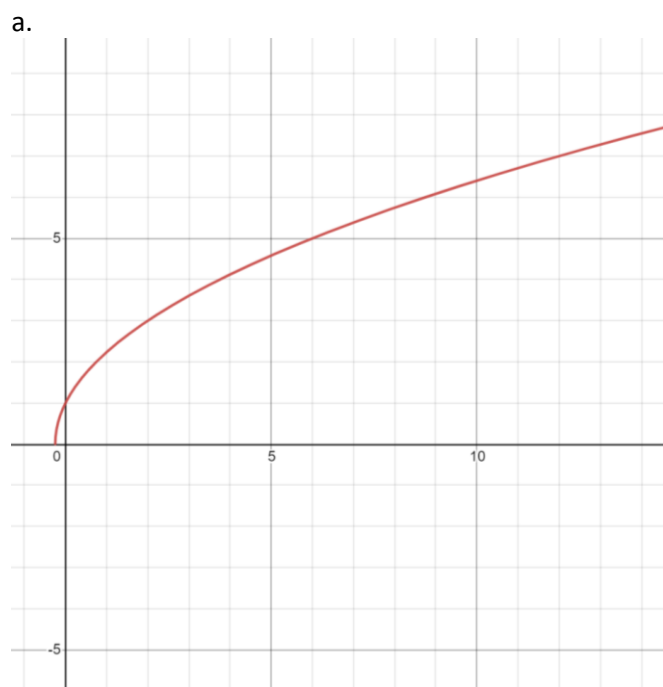
Examples Are the following one-to-one functions? If no, why not?

a. $f(x) = x^2$

b. $g(x) = 2x + 1$

What is the horizontal line test?

Example Use the horizontal line test to determine if the functions are one-to-one:



What is an inverse function?

What does an inverse function have to do with one-to-one functions?

Describe how to use composition to determine if 2 functions are inverses of one another.

Example Use composition to determine if the functions $f(x) = 2x - 4$ and $g(x) = \frac{1}{2}x - 2$ are inverses.

Example Use composition to determine if the functions $f(x) = \frac{2}{x+6}$ and $g(x) = \frac{6+x}{2}$ are inverses.

Using $f(x) = 4x + 2$, outline the steps for how to find the inverse of a function.

Example Find the inverse of the following functions.

a. $f(x) = \sqrt[3]{3x + 1}$

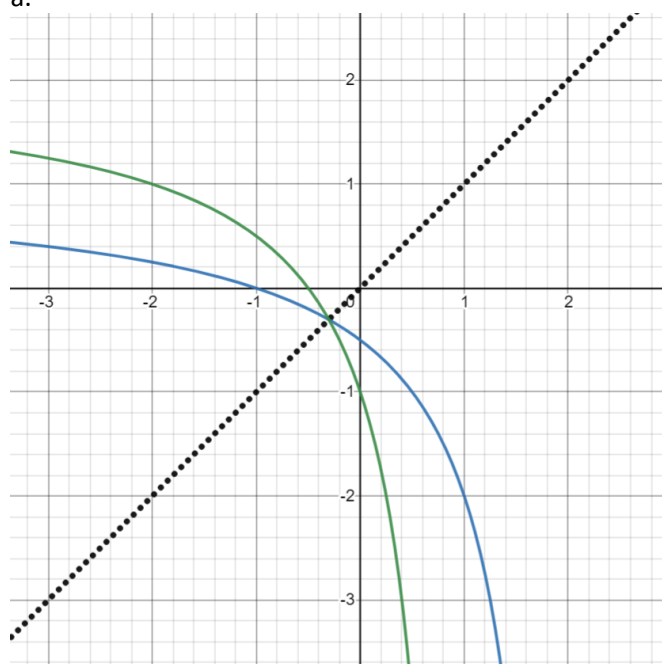
b. $f(x) = \frac{x+2}{x-1}$

c. $f(x) = \sqrt{x - 5}$

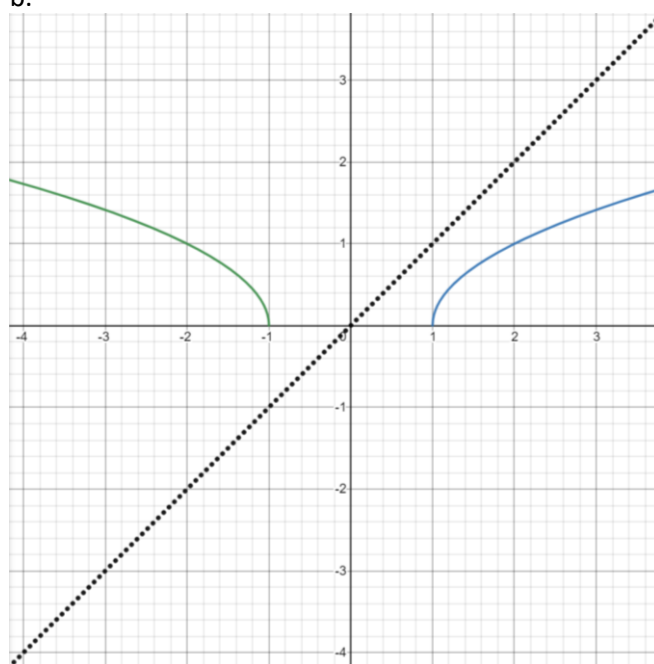
How can we tell on a graph if 2 functions are inverses of one another?

Examples Are the following graphs inverses of one another?

a.



b.



Example Draw the inverse of the following graph.

