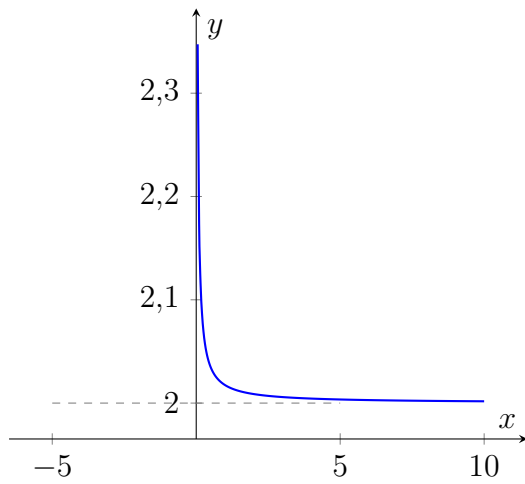
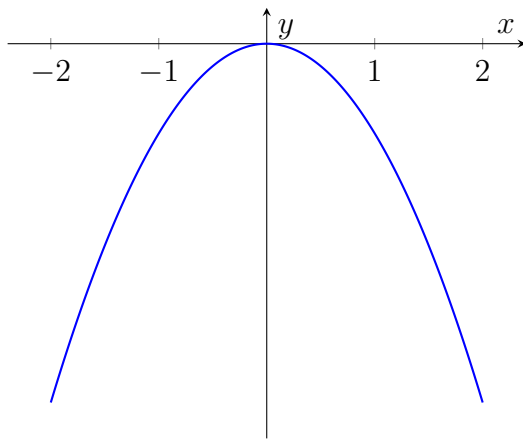
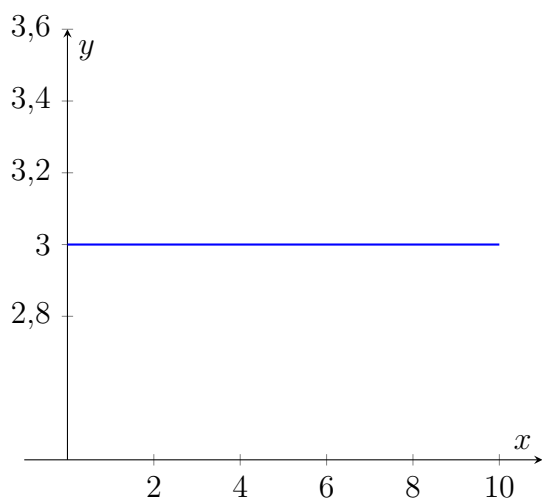
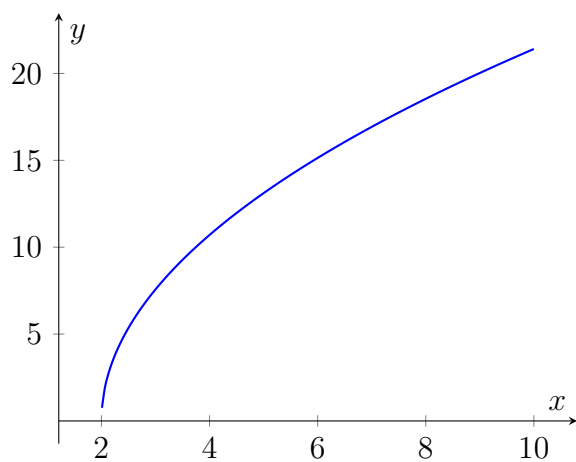


II Exercise Lesson

Monday, October 6th 2014





Ex. 1 For the functions in the figures above find: \inf , \sup , \max , \min . Determine if they are injective.

Ex. 2 Find the inverse function for each of the following:

- $y = 4x - 1$
- $y = 2x + 4$
- $y = 1 - x$
- $y = x$

Ex. 3 Determine the equation of the line:

1. passing through the points $(1, 0)$ and $(0, 1)$
2. passing through the points $(2, 3)$ and $(0, -1)$

3. passing through the points $(1, 0)$ and $(0, 0)$
4. passing through the points $(-2, 3)$ and $(-2, 1)$
5. passing through the point $(1, 0)$ and parallel to the line $s : 2x + y - 1 = 0$
6. passing through the point $(2, 1)$ and parallel to the line $s : y - 2 = 0$
7. passing through the point $(0, 0)$ and parallel to the line $s : x + 3y - 2 = 0$
8. passing through the point $(-1, 1)$ and perpendicular to the line $s : 2x + y - 1 = 0$
9. passing through the point $(0, 2)$ and perpendicular to the line $s : x + y - 1 = 0$
10. passing through the point $(1, 2)$ and perpendicular to the line $s : x - 1 = 0$

Determine if the point $(1, 1)$ belongs to the line found in 1).

Determine if the point $(0, 0)$ belongs to the line found in 4).

Determine if the point $(1, 1)$ belongs to the line found in 6).

Ex. 4 Given the functions:

$$f(x) = 3x - 1, \quad g(x) = \frac{2+x}{1-x}, \quad h(x) = \sqrt{2-x}$$

find:

$$f \circ g, \quad f \circ h, f \circ h, \quad g \circ f, \quad h \circ f, \quad h \circ g$$

and their domains.