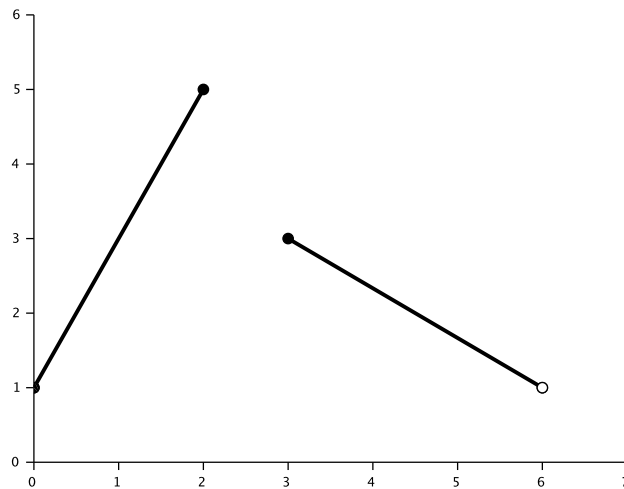


Homework1
Due : 09/06/17

Exercise 1

Here is the graph of a function f .



1. What is the domain of the function?
2. What is the range of the function?
3. Compute -when possible- the following quantity : $f(0)$, $f(2)$, $f(2.5)$, $f(4)$ and $f(6)$.
4. What is the monotonicity of the function?
5. What is the slope of the function on $[0, 2]$ and on $[3, 5]$? Justify your answer by a computation.
6. Write the expression of the function f using a separation of cases.

Exercise 2

1. Sketch the graph of the function $g : x \mapsto (x - 3)^2 + 2$
2. Using only the definition of a non-decreasing function, prove that g is monotonically non-decreasing on $[3, +\infty)$

Exercise 3

Exercise 83 of Section 1.4