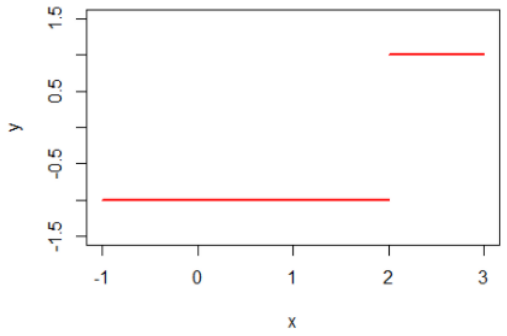
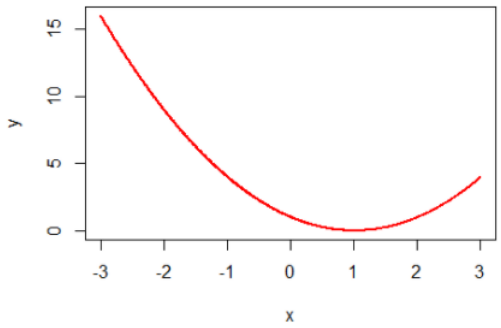
Lecture 2 - Practice Questions

1. What is the domain of the real-valued function $f(x) = \sqrt{2x}$?
   A. $\mathbb{R}_{>0}$
   B. $\mathbb{R}_{\geq 0}$
   C. $\mathbb{R}_{<0}$
   D. $\mathbb{R}_{\leq 0}$
2. Which of the following f is not a function with domain $\mathbb{R}$?
   A. $f(x) = \sqrt{x}$
   B. $f(x) = 3x + 4$
   C. $f(x) = -x^2$
   D. $f(x) = 3x^3 - 2x$
3. What's the domain of the real-valued function $f(x) = \ln(-x)$?
   A. $\mathbb{R}$
   B. $\mathbb{R}_{>0}$
   C. $\mathbb{R}_{\neq 0}$
   D. $\mathbb{R}_{<0}$
4. Consider the function plotted below. At which point is it not continuous

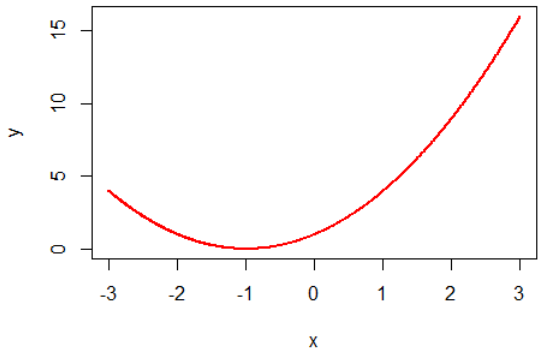


   A. 0
   B. 0.5
   C. 1
   D. 2
5. Consider the function plotted below. Which point is a local minimum?



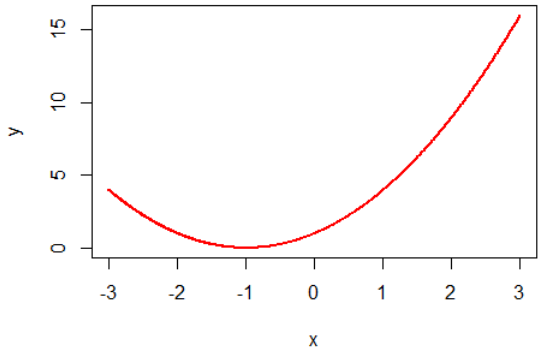
A. 0
B. 1
C. 2
D. 3

6. Consider the function $f : [-3, 3] \to \mathbb{R}$ plotted below. Which point is the global maximum?



A. -3
B. -1
C. 0
D. 3

7. Consider the function $f : [-3, 3] \to \mathbb{R}$ plotted below. Which point is the global minimum?



A. -3

B. -1

C. 0

D. 3

8. Consider the function $f : [-1, 1] \to \mathbb{R}$, $f(x) = x^2$. Choose the correct statement:

   A. The function is unbounded

   B. The function is not continuous

   C. The function has one local maximum

   D. None of the others

Question	Correct Answer
1	B
2	A
3	D
4	D
5	B
6	D
7	B
8	D