

Math 2A Worksheet: Introduction

Write your names and Student ID numbers at the top of the page

1. Let the function f be defined as follows

$$f(x) = \begin{cases} x + 1 & \text{if } x \leq 1 \\ x^2 & \text{if } x > 1 \end{cases}$$

- (a) Find the values:

$$f(0) = \qquad f\left(-\frac{1}{2}\right) = \qquad f(-5) =$$

- (b) Sketch the graph of f .

2. Sketch the graph of the curve $y = -3(x + 2)^2 + 1$ using graph transformations.

3. Find the domain of the $g(x) = \frac{|x|}{x^2}$ and sketch the graph of g .

4. Find the domain and range of the following function, and sketch it

$$h(x) = \sqrt{4 - x^2}$$

(*Hint:* $h^2 + x^2 = 4 \dots$)