

MA133C & MA160
Calculus 1

Lecture 21

Functions and graphs

Here is a collection of problems about functions and their graphs.

These are “Question 4 - type” problems.

1. Suppose that

$$f(t) = \frac{1-t}{t+1}.$$

- ▶ Determine the average rate of change of f in the interval $1 \leq t \leq 2$.
- ▶ Evaluate $\lim_{t \rightarrow +\infty} f(t)$.
- ▶ Sketch the graph of f .

Functions and graphs

2. Sketch the graph of the function $f(x) = x^3 + 2x$.

Functions and graphs

3. Sketch the graph of the function $f(x) = 2 + e^{1-x}$.

Functions and graphs

4. Sketch the graph of the function

$$f(x) = xe^{-x}.$$