

# MEMORIAL UNIVERSITY OF NEWFOUNDLAND

## DEPARTMENT OF MATHEMATICS AND STATISTICS

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SECTION 4.4

Math 1000 Worksheet

FALL 2022

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**For practice only. Not to be submitted.**

- Find the maximum and minimum values of each function on the indicated closed interval.
  - $f(x) = x^3 - 9x$ , on  $-4 \leq x \leq 3$
  - $f(x) = \frac{x^2 + 3}{x + 1}$ , on  $0 \leq x \leq 4$
  - $f(x) = \sec(x)$ , on  $-\frac{\pi}{6} \leq x \leq \frac{\pi}{3}$
  - $f(x) = x - 2\cos(x)$ , on  $-\pi \leq x \leq \pi$  (approximate the maximum and minimum values to two decimal places)
- Consider the function  $f(x) = 2 + 6x^2 - 2x^3$ .
  - Find the maximum value of  $f(x)$  on the open interval  $1 < x < 7$ .
  - Find the minimum value of  $f(x)$  on the open interval  $-7 < x < 1$ .
- Find the minimum value of  $f(x) = \frac{x^2 + 4}{8 - 3x}$  on the open interval  $-2 < x < 2$ .