**Name:** _____

**MATH 104**
**Spring 2023**
**HW 1: Due 05/04**

**Problem 1.** (10pt) Define a function $f(x)$ by $f(x) = x^2 + 4x - 2$. Showing all your work and simplifying as much as possible, find the following:

(a) $f(0)$

(b) $f(-2)$

(c) $f(x-2)$

(d) $f(x+h)$

(e) $\dfrac{f(x+h) - f(x)}{h}$

**Problem 2.** (10pt) Let $f(x) = 2x - 5$ and $g(x) = x^2 - 6$. Showing all your work, compute the following:

(a) $(f - g)(-2)$

(b) $(fg)(1)$

(c) $\left(\dfrac{f}{g}\right)(3)$

(d) $(f \circ g)(0)$

(e) $(g \circ f)(0)$