

UNIVERSITY OF TEXAS AT AUSTIN

Quiz #2

Prerequisite material.

Provide your **complete solution** to the following problems:**Problem 2.1.** (5 points) Let the function  $f$  be given by

$$f(x) = \begin{cases} x - 3 & \text{for } x \geq 3 \\ 0 & \text{otherwise} \end{cases}$$

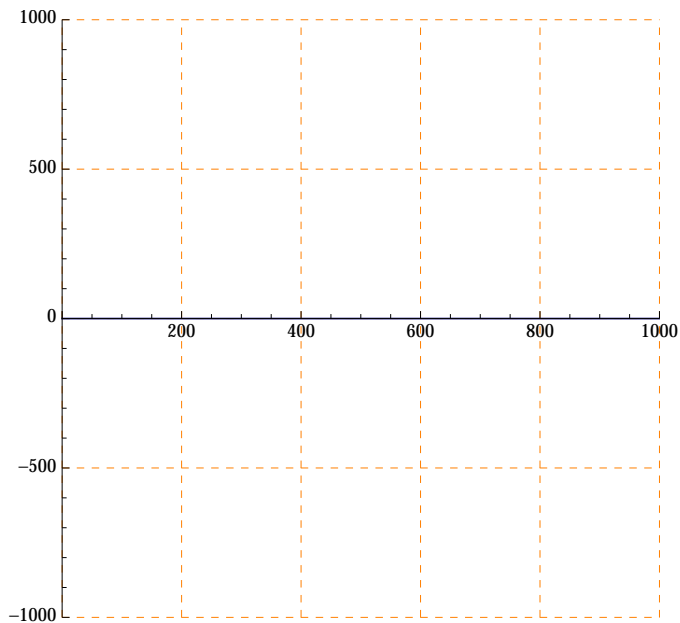
Draw the graph of the function  $g$  defined as

$$g(x) = f(x) - \frac{3}{2}$$

Clearly label your axes!

**Problem 2.2.** (5 points) Draw the graph of the following function in the coordinate system provided below:

$$f(x) = \begin{cases} x & \text{for } x < 500 \\ 1500 - 2x & \text{for } x \geq 500 \end{cases}$$



**Problem 2.3.** (5 pts) Let  $f : \mathbb{R} \rightarrow \mathbb{R}$  and  $g : \mathbb{R} \rightarrow \mathbb{R}$  be two functions given by

$$f(x) = x - 10$$

and

$$g(x) = \begin{cases} x & \text{if } x \geq 0 \\ 0 & \text{if } x < 0 \end{cases}$$

Then,  $g(f(3))$  equals ...

- (a) -13
- (b) -10
- (c) -7
- (d) 0
- (e) None of the above