

Math 2250 HW #7

Due 1:25 PM Friday, September 30

Reading: Hass §3.6–3.8 (this is §3.5–3.7 in the first edition)

Problems: Do the assignment “HW7” on WebWork. In addition, write up solutions to the following two problems and hand in your solutions in class on Friday.

1. Problem #22 from page 148 of the textbook (this is problem #22 from page 156 of the first edition).
2. Consider the piecewise function

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

- (a) Is there a choice of b that will make $g(x)$ continuous at $x = 0$? Why or why not?
 - (b) Is there a choice of b that will make $g(x)$ differentiable at $x = 0$? Why or why not?
3. Assume that $g'(3) = -1$, $h'(2) = 5$, and $h(2) = 3$. If $f(x) = (g \circ h)(x)$, what is $f'(2)$?