Math 120 A, B - Winter 2007
Mid-Term Exam Number Two
February 22, 2007
Answers

Version A: problem 1 has $f(x) = |x + 2|$.
Version B: problem 1 has $f(x) = |x + 3|$.

1. Version A:
$$h(x) = \begin{cases} x - 1 & \text{if } x < -2 \\ 5x + 7 & \text{if } -2 \leq x \leq 3 \\ x + 19 & \text{if } x > 3 \end{cases}$$

   Version B:
$$h(x) = \begin{cases} -x - 5 & \text{if } x < -3 \\ 3x + 7 & \text{if } -3 \leq x \leq 6 \\ 25 & \text{if } x > 6 \end{cases}$$

   There are other correct placings of the $\leq$ and $\geq$ (versus $<$ and $>$). As long as the expression defines $h(x)$ for all $x$, it is correct (as far as the $\leq$ / $\geq$ / $<$ / $>$ is concerned).

2. Version A: 82.1052 tons

   Version B: 84.2857 tons

3. Version A: (a) 102.730 m (b) 2.9888 meters per second

   Version B: (a) 118.601 m (b) 2.3423 meters per second

4. Version A: 161.7329 meters

   Version B: 95.8897 meters