

Name: \_\_\_\_\_

**Key to Practice Test 2 for Test 3 for MTH151I-L**

1.  $4 - \frac{1}{48}$ .
2. decreasing on  $(-\infty, 0]$  and  $[2, \infty)$ ; increasing on  $[0, 2]$ . Local min at  $x = 0$ ; local max at  $x = 2$ .
3. inc. on  $(-\infty, -\sqrt{7/3}]$  and on  $[\sqrt{7/3}, \infty)$ ; dec. on  $[-\sqrt{7/3}, \sqrt{7/3}]$ . Local max at  $x = -\sqrt{7/3}$ ; local min at  $x = \sqrt{7/3}$ ; CU on  $[0, \infty)$ ; CD on  $(-\infty, 0]$ ; pt. of inflection at  $(0, 6)$ .
4. omitted
5.  $4/3$ .
6. (note: I made a mistake on an earlier version of the practice test. The limit should have been taken from the right, at 0. I originally let  $x \rightarrow \infty$ .)  $L = 1$ .
7. 4000 cubic centimeters.
8.  $x = 2000$  (length of the side parallel to the river);  $y = 1000$ .
9.  $f(x) = x^2 - 2x^3 + 9x + 9$ .
10.  $6ft/s^2$ .