## Name: \_

## Math 151 Calculus I – Crawford

Books, notes (in any form), and calculators are not allowed. Show all your work. Good Luck!

**1.** (6 pts) Use the limit definition  $f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$  to find the derivative of  $f(x) = x^2 - 4x$ . [Show all your work. No credit will be given if you do not use the limit definition.] **2.** (3 pts) Determine the value of c that will make the following function continuous at x = 2.

$$f(x) = \begin{cases} c - 3x & \text{if } x < 2\\ x^2 & \text{if } x \ge 2 \end{cases}$$

**3.** (6 pts) The displacement (in meters) of a particle moving in a straight line is given by  $s(t) = \frac{3}{t}$  where t is measured in seconds. is  $v(2) = s'(2) = -\frac{3}{4}$ . [Show all your work. No credit will be given if you do not use the limit definition.]