

*No graphing calculators are allowed on this quiz.* Please read each question carefully, follow directions and clearly mark your solutions. **Show your work for full credit.**

1. (6 points) Differentiate the following functions

(a)  $f(x) = x^3 - 2x + 8$

(b)  $g(x) = (x - 3)(2x + 1)$

2. (4 points) Assume that an object's distance is given by the function  $s(t) = \frac{7t-1}{t}$ . Find the object's velocity as a function,  $v(t)$ , and the object's acceleration,  $a(t)$ . [Hint:  $v(t) = s'(t)$  and  $a(t) = v'(t)$ .]