

NAME \_\_\_\_\_  
*please print clearly* (1 point)

**QUIZ II** Due: Friday, Oct. 9  
**MATH 153** 25 points

Open book, open notes, but you must do your own work. In particular, no “internet” help.  
To receive credit, show all appropriate work.  
Neatness, clarity and quality of work will be worth an unspecified number of points.  
Please use pencil, otherwise this quiz will not be graded.

All problems are 6 points each.

1. Solve the inequality:  $\frac{(x+4)^3(x-2)}{x^2(x-3)} \geq 0$ .

Express your answer as on a linear graph and using interval notation.

2. Find the domains for the following functions.

$$f(x) = \frac{x-1}{(2x-1)(x+3)}$$

dom  $f(x)$ :

$$g(t) = \sqrt{(t-1)(t-4)}$$

dom  $g(t)$ :

3. Let  $f(x) = x^2 - 4x + 1$ . Simplify the following.

$$f(\sqrt{3}) =$$

$$f(x + 2) =$$

4. Let  $r(x) = \frac{7x}{x+2}$ . Find the range of  $r(x)$ .

range  $y = r(x)$ :

Extra Credit (4 points) Find and simplify all real solutions to:  $x^6 - 19x^3 - 216 = 0$ .  
Do your work on a separate sheet of paper and then staple to this quiz.