

NAME _____
please print clearly

QUIZ III Due: Friday, Oct. 23
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.
In other words, do your very best work on this quiz sheet.

(4) 1. Let $f(x) = 3x^2 - 2x$ and $g(x) = 5x + 2$. Find and simplify $f \circ g(x)$.

(1) 2. True or False: $f(x) = x^2$ and $g(x) = \sqrt{x}$ are inverse functions.

(3) 3. Which of the following functions are one-to-one? (yes or no)

a) $f(x) = x^3 + 4x + 2$

b) $g(x) = x^3 - 4x + 2$

c) $h(x) = x^3 - 4x + 1.5x$

(2) 4. Let $f(x) = x^3 + 4x + 2$.

a) $f(2) =$

b) $f^{-1}(18) =$

(8) 4. Let $f(x) = \frac{4x}{2x-5}$.

a) Find its inverse $g(x)$.

b) Use the letter x for domains and the letter y for the ranges.

dom $f(x)$:

dom $g(x)$:

range $y = f(x)$:

range $y = g(x)$:

(7) 5. Let $p(x) = -2x^2 + 6x + 7$.

Exact answers **and** decimal approximations as needed, i.e., both as needed.

y - intercept: $y =$

x - intercepts: $x =$

Vertex $V =$

Max Value:

Min Value:

Now, sketch its graph.

Extra Credit (4 points) Let $f(x) = .5x^3 + 2.3x + 1.27$. Use the graph of $y = f(x)$ to give a two decimal place approximation for the following:

$f^{-1}(3) =$

$f^{-1}(-3) =$