Meramec College Algebra Quiz 7 Form A Solution Summer 2008

NAME: _____Score_____/10

Please **print** your name

SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION

1. What is the area of a trapezoid with height 3 and bases 4 and 5?_ $A = \frac{27}{2}$.

$$A = \frac{1}{2}(b + B)h = \frac{1}{2}(4 + 5)3 = \frac{27}{2}$$

2. What is the rule for the function $f \circ g$ if f(x) =log(x) and g(x) = $3x^2 - 4x + 9$?

$$f \circ g(x) = f(g(x)) = f(3x^2 - 4x + 9) = \log(3x^2 - 4x + 9)$$

3. Find two simpler functions f and g so that the function h whose rule is $h(x) = (2x^3 + x - 4)^3$ may be written as the composition $f \circ g$ of the simpler functions.

Let $f(x) = x^3$

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

Then $f \circ f(x) = f(g(x)) = f(2x^3 + x - 4)$

4. Find two simpler functions f and g so that the function h whose rule is $h(x) = \ln\left(\frac{2x}{x^2 - 5}\right)$ may be written as the composition $f \circ g$ of the simpler functions.

Let $f(x) = \ln(x)$

Let $g(x) = \frac{2x}{x^2 - 5}$

Then $f \circ g(x) = f(g(x)) = f\left(\frac{2x}{x^2 - 5}\right)$