

Name: \_\_\_\_\_  
PC: Decomposition Homework

Date: \_\_\_\_\_  
Ms. Loughran

For 1 – 4, express the function in the form  $f \circ g \circ h$ .

1.  $F(x) = \sqrt[3]{\sqrt{x} - 1}$

2.  $F(x) = (4 + \sqrt[3]{x})^9$

3.  $F(x) = \frac{2}{(3 + \sqrt{x})^2}$

4.  $F(x) = \sqrt[4]{x^3 + 9}$

5. Find the functions  $f$  and  $g$  so that  $h(x) = (f \circ g)(x)$

(a)  $h(x) = (x - 1)^3 - 2$

(b)  $h(x) = 2(x + 1)^2 + 3$

(c)  $h(x) = \frac{x + 1}{x + 2}$

6. Find the functions  $f$ ,  $g$  and  $h$  so that  $F(x) = (f \circ g \circ h)(x)$

$$F(x) = \sqrt{(x^2 - 3x)^5}$$