

Function composition, function inverses. Class/section \_\_\_\_\_ Name \_\_\_\_\_

For these problems:

let  $f(x) = x^2 - 1$ ; let  $g(x) = 1/(x+2)$ ; let  $h(x) = 2x+3$ ; let  $k(x) = (3x-1)/2$ ; let  $s(x) = 5x$ .

Calculate the following function compositions:

	Problem	Work	Answer
1	$d(x) = f \circ s(x)$		
2	$e(x) = f \circ h(x)$		
3	$m(x) = h \circ k(x)$		
4	$n(x) = h \circ s(x)$		
5	$p(x) = h \circ g(x)$		
6	$q(x) = s \circ h(x)$		
7	$r(x) = s \circ k(x)$		
8	$t(x) = s \circ f(x)$		
9	$v(x) = g \circ s(x)$		
10	$w(x) = g \circ h(x)$		
11	$z(x) = g \circ f(x)$		

Calculate the following function inverses. After calculating, check your work by composing the function with its inverse. Some of the functions below are answers above.

Extra work may be done on an attached sheet (label your attached work neatly!)

12	$f^{-1}(x)$	[assume that the domain of $f$ is $[0, \infty)$ in this problem]	
13	$g^{-1}(x)$		
14	$h^{-1}(x)$		
15	$k^{-1}(x)$		
16	$m^{-1}(x)$		
17	$n^{-1}(x)$		
18	$p^{-1}(x)$		
19	$q^{-1}(x)$		
20	$r^{-1}(x)$		
21	$t^{-1}(x)$		
22	$v^{-1}(x)$		
23	$w^{-1}(x)$		
24	$z^{-1}(x)$		