

MATH2 (814012) – SPRING 2006

WORKSHEET 7

Question (1): Let $f(x) = \sqrt{x-3}$ and $g(x) = x^2 - 3x$

1. Find $(f \circ g)(x) =$

2. Find $(g \circ f)(x) =$

3. Determine whether $f(x)$ and $g(x)$ are inverses of each other. (Give the reason)

4. Evaluate: $g(f(7)) =$

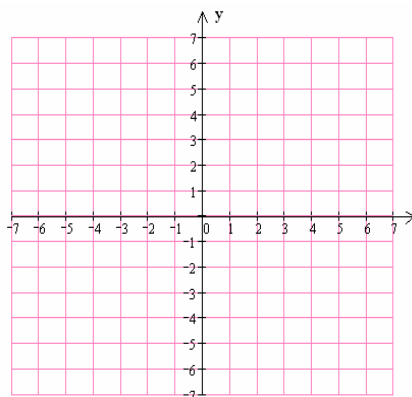
$f(g(4)) =$

$(f \circ g)(4) =$

$(g \circ f)(7) =$

5. Find $(f + g)(x)$, $(f - g)(x)$, $(f \cdot g)(x)$, $\left(\frac{f}{g}\right)(x)$ and their domains.

6. Graph $f(x)$ and $f^{-1}(x)$ on the same pair of axes



Question (2): Find the inverse function of the following functions (check your answer):

(1) $f(x) = 4x + 3$

(2) $g(x) = \sqrt{2x-1}$

(3) $h(x) = \frac{2x+3}{x-4}$

Question (3): Let $f(x) = \frac{2x-1}{x+2}$ and $g(x) = |x-1|$

(1) Find $(f+g)(x)$ and its domain.

(2) Find $\left(\frac{f}{g}\right)(x)$ and its domain.