Algebra 2 – Review #2 for Chapter 4 Test

1. Let f(x) = x^2 + 2x and g(x) = x + 2 and h(x) = $\sqrt{x+3}$. Find the following:

   a) (f + g)(x)

   b) (f – g)(x)

   c) (fg)(x)

   d) (f/g)(x)

   e) (f $\circ g)(x)$

   f) (g $\circ f)(x)$

   g) (h $\circ$ $g)(x)$

   h) (f $\circ$ h) (x)

   i) f(h(6))

   j) h(g(f(1)))

   k) $f(f^{-1}(x))$

   l) $h^{-1}(h(5))$

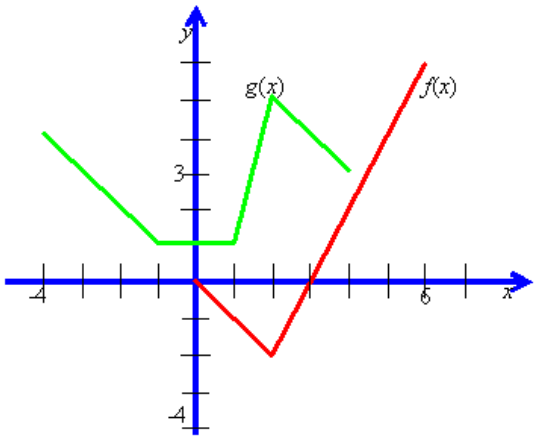
2. Given the graph below, find the indicated function values.

   a. (f $\circ$ g)(-3)

   b. g(f(2))

   c. (f $\circ$ g)(0)

   d. (g $\circ$ f)(3)



3. Find the inverses of the following functions.

a) F(x) = 3x – 7

b) F(x) = $\sqrt{x+5} - 6$

c) F(x) = $\frac{4+x}{6-2x}$

4. Show that the functions f(x) and g(x) are inverses of each other.

f(x) = 4x – 5 g(x) = $\frac{x+5}{4}$

5. Given f(x) = $3x^2 - 5x + 4$, find the difference quotient

a) $\frac{f(x+h)-f(x)}{h}$ b) $\frac{f(3+h)-f(3)}{h}$