13 problems
Packet #1 & 2 worth 2 points each

/10 points

FIVE STAR

Algebra 2 ~ Assignment 38

NEW page 523

9. $f(x) = x+6$, $g(x) = x-3$

$(f \circ g)(2) = f(g(2)) = ((2)-3)+6 = -1+6 = \boxed{5}$

$(g \circ f)(2) = g(f(2)) = ((2)+6)-3 = 8-3 = \boxed{5}$

11. $g(x) = 4x$, $h(x) = 2x-1$

$g(h(x)) = 4(2x-1) = \boxed{8x-4}$

$h(g(x)) = 2(4x)-1 = \boxed{8x-1}$

21. $f(x) = x+1$, $g(x) = x^2+6$

$(f \circ g)(3) = ((3)^2+6)+1 = 9+6+1 = \boxed{16}$

$(g \circ f)(3) = ((3)+1)^2+6 = 4^2+6 = 16+6 = \boxed{22}$

25. $g(x) = x+7$, $h(x) = x+4$

$g(h(x)) = (x+4)+7 = x+4+7 = \boxed{x+11}$

$h(g(x)) = (x+7)+4 = x+7+4 = \boxed{x+11}$

27. $g(x) = x-2$, $h(x) = x^2$

$g(h(x)) = (x^2)-2 = \boxed{x^2-2}$

$h(g(x)) = (x-2)^2 = \boxed{x^2-4x+4}$

29. $g(x) = x+1$, $h(x) = x^3$

$g(h(x)) = (x^3)+1 = x^3+1$

$h(g(x)) = (x+1)^3 = (x+1)(x+1)(x+1)$

$= (x^2+2x+1)(x+1)$

$= x^3+x^2+2x^2+2x+x+1 = \boxed{x^3+3x^2+3x+1}$

$\boxed{x^3+1}$

for #31–39,

$f(x) = x^2$, $g(x) = 4x$, $h(x) = x-1$

31. $h(g(2)) = (4(2))-1 = 8-1 = \boxed{7}$

33. $(h \circ f)(3) = ((3)^2)-1 = 9-1 = \boxed{8}$

35. $h(g(-2)) = (4(-2))-1 = -8-1 = \boxed{-9}$

37. $g(f(x)) = 4((x)^2) = \boxed{4x^2}$

39. $(f \circ (g \circ h))(x) = (4(x-1))^2 = (4x-4)^2 = (4x-4)(4x-4)$

$= 16x^2-16x-16x+16 = \boxed{16x^2-32x+16}$

Packet

1. $f(x) = 2x-5$, $g(x) = 1-x$

$(f+g)(x) = 2x-5+1-x = \boxed{x-4}$

$(f-g)(x) = 2x-5-(1-x) = 2x-5-1+x = \boxed{3x-6}$

$(fg)(x) = (2x-5)(1-x) = 2x-2x^2-5+5x = \boxed{-2x^2+7x-5}$

$(f/g)(x) = \boxed{\frac{2x-5}{1-x}}$

Asmt 38 ~ continued

2. $f(x) = x^2+1$
$g(x) = x-4$

$(f+g)(x) = x^2+1+x-4 = \boxed{x^2+x-3}$

$(f-g)(x) = (x^2+1)-(x-4)$
$= x^2+1-x+4 = \boxed{x^2-x+5}$

$(fg)(x) = (x^2+1)(x-4)$
$= \boxed{x^3-4x^2+x-4}$

$(f/g)(x) = \boxed{\frac{x^2+1}{x-4}}$