Algebra 2- Chapter 6
**Learning Target Quiz #6 and 7**

Name Key Per ____

**LT #6: Function Operations**

Perform the indicated operation. (2 pts each)
Let $f(x) = 2x - 1$ and $g(x) = x^2 + 3x$.

1. $(f - g)(2)$

$f(2)=2(2)-1=3$
$g(2)=2^2+3(2)=10$
$4+6$
$3-10$

2. $(f \cdot g)(x)$

$(2x-1)(x^2+3x)$
$2x^3+6x^2-x^2-3x$

3. $\left(\frac{g}{f}\right)(4) = \frac{28}{7}$

$g(4)=$
$4^2+3(4)$
$16+12=28$
$f(4)=2(4)-1$
$8-1=7$

Find the domain restrictions, and then state the domain in set notation. (2 pts)

4. $f(x) = \sqrt{3x-9}$

$3x-9 \geq 0$
$3x \geq 9$
$x \geq 3$

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

$x^2-4 \neq 0$
$(x-2)(x+2) \neq 0$

1. $-7$
2. $2x^3+5x^2-3x$
3. $4$
4. Domain: $\{ x \geq 3 \}$
5. Domain: $\{ x \neq 2, -2 \}$

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**LT #7: Inverse Relations/Functions**

Find the inverse of the given functions. Determine if the answer to #1 is also a function. (2 pts each)

1. $\{(4,3), (-2,7), (0,3), (-1,-1)\}$

2. $f(x) = -\frac{1}{2}x + 3$

$y = -\frac{1}{2}x + 3$
$x = -\frac{1}{2}y + 3$
$-2(x-3) = -\frac{1}{2}y(-2)$
$-2x+6 = y$

1. Points on the inverse: $\{(3,4), (7,-2), (3,0), (-1,-1)\}$

Is the inverse a function? NO

2. $f^{-1}(x) = -2x+6$

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