College Algebra with Review

Chapter 9/10 Test Review - Key

1. One of the following types

Use the square root property to solve: $x=0 \qquad x=-6$	Use the square root property to solve: $x=\frac{1\pm 2\sqrt{6}}{3}$	Use the square root property to solve: $x=\frac{-2}{5}\pm i$

2. One of the following types

Use completing the square to solve: $x=-2\pm\sqrt{6}$	Use completing the square to solve: $x=-1\pm i\sqrt{29}$	Use completing the square to solve: $x=5\pm 2\sqrt{6}$

3. One of the following types

Use the quadratic formula to solve: $x=-1\pm 2i$	Use the quadratic formula to solve: $x=5\pm 2\sqrt{6}$	Use the quadratic formula to solve: $x=10 \qquad x=2$

4. One of the following types:

Use the u-substitution to solve: $x=\pm\sqrt{2} \qquad x=\pm\sqrt{5}$		

5. Solve a polynomial inequality (may have to factor using DOTS, PSD, or Key #):

$answer: (-\infty,-4)\cup(5,\infty)$

6. Find the domain of the following functions:

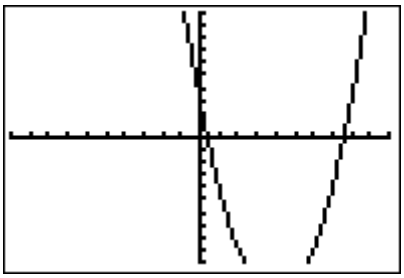
$x\neq 3 \quad x\neq 6$ or $(-\infty,3)\cup(3,6)\cup(6,\infty)$	$x\geq\frac{-8}{3}$ or $\left[\frac{-8}{3},\infty\right)$

7. Find the composition of two functions:

Given $f(x)=x^2-3x-2$ and $g(x)=x-5$, find: a) $x^2-13x+38$ b) x^2-3x-7	Given $f(x)=11x-1$ and $g(x)=3x+7$, find: a) $33x+76$ b) $33x+4$

8. Find the vertex, axis of symmetry, any min and/or max's and the graph of:

vertex = (4, -13)
aos: x = 4
min: -13



9. Evaluate a Piecewise Function

Given: $f(x)=\begin{cases}\lvert x+3\rvert, x\le 0\\ 9x-1, x>0\end{cases}$, find: a) f(-10) = 7 b) f(9) = 80 c) f(0) = 3	Given: $f(x)=\begin{cases}x^2-3x, x\le 2\\ 5x-1, x>2\end{cases}$, find: a) f(8) = 39 b) f(2) = -2 c) f(-1) = 4

10. Determine if a function is even, odd, or neither

Determine if the following function is even, odd, or neither (no guessing, if your "why" is not correct, you will not receive credit): Even, symmetric to y-axis	Determine if the following function is even, odd, or neither (no guessing, if your "why" is not correct, you will not receive credit): Odd, symmetric to origin