Algebra II **Composite and Inverse of functions Practice**

Select the correct answer for each problem.

1. What is the domain of the function $f(x) = \frac{1}{x+1}$

   A. All positive real numbers
   B. All real numbers except 1
   C. All real numbers except –1
   D. All real numbers

2. What is f(-2) if $f(x) = x^2 - 3x + 4$

   A. 14
   B. -14
   C. 6
   D. -6

3. Find inverse of the relation {(2, 5), (8,4), (-3, 4)}

   A. {(-3, 4), (8,4), (2, 5)}
   B. {(5 ,2), (4, 8), (4, -3)}
   C. {(-2, -5), (-8,-4), (3, -4)}
   D. {(-5 ,-2), (-4, -8), (-4, 3)}

4, If $f(x) - x - 1$ and $q(x) = x^2$, what is f(q(x))

   A. 8
   B. -8
   C. 16
   D. -16

5. What is the inverse for the function $f(x) = x^2 + 1$

   A. $f(x)^{-1} = \sqrt{x-1}$
   B. $f(x)^{-1} = x^2 - 1$
   C. $f(x)^{-1} = \sqrt{x+1}$
   D. $f(x)^{-1} = x^2 + 1$

6. Which set of relations below in NOT a function?

   A. {(3,5), (-4, 6), (-2, -2), (1, 0)}
   B. {(3,6), (-4, 6), (-2, 6), (1, 6)}
   C. {(-3,5), (-3, 6), (-2, -2), (1, 0)}
   D. {(5,5), (6, 6), (-2, -2), (0, 0)}

7. What is the domain of the function at right?

   A. All real numbers
   B. All real numbers greater than 2
   C. All real numbers less than 2
   D. All positive real numbers

8. What is the range of the function above?

   A. All real numbers
   B. All real numbers greater than 2
   C. All real numbers less than 2
   D. All positive real numbers

f(x) = 2x+ 1 **g(x) = $\frac{x+1}{2}$** **h(x) = $\sqrt{x}+1$**

Find each composite below.

1. f(g(4))
2. g(f(9))
3. h(f(3))
4. f(h(16))
5. h(g(7))
6. g(h(25))
7. g(f(x+1)
8. h(f(x))
9, h(g(2y + 1))
10. f(f(x))

Find the inverse of each function below

1. f(x) = 3x + 2
2. f(x) = $\frac{x+1}{2}$
3. f(x) = x^2
4. f(x) = $\frac{4}{x}$
5. f(x) = - x^3