**Name:**_____ **Quiz 1: Ch 2.1 – 2.6**

***Draw a box around your final answers. No partial credit will be given.***

$$\text{Let } f(x)=\begin{cases}2+\sqrt{1-x} & , x\le 1\\ \dfrac{1}{1-x} & , x>1\end{cases}$$

*Find*

1. $f(0) =$

$f(1) =$

$f(2) =$

2. Determine whether the point lies on the graph of the function.

$(3,3);\ f(x)=\dfrac{x+1}{\sqrt{x^2+7}}+2$

3. Find the rules for the composition function: $f \circ g$

$f(x)=x^2+x+1;\quad g(x)=x^2$

4. Evaluate h(2) where $h(2)$, where $h = g \circ f$

$f(x) = x^2 + x + 1; \quad g(x) = x^2$

5. If the equation defines y as a linear function of x, write it in the form: $y = mx + b$

$3x - 6y + 7 = 0$

6. A manufacturer has a monthly fixed cost of $100,000 and a production cost of $14 for each unit produced. The product sells for $20/unit. Compute the profit (loss) corresponding to a production level of 12,000 units.

7. Find the indicated limit, if it exists

$$\lim_{x \to -5} \frac{x^2 - 25}{x + 5}$$

8. Find the indicated limit, if it exists

$$\lim_{x\to\infty}\frac{2x^2+3x+1}{x^4-x^2}$$

9. Use the Limit Definition formula to find the derivative of: $f(x)=2x+7.$

10. Suppose the distance s (in feet) covered by a car moving along a straight road after t sec is given by the function $s=f(t)=2t^2+18t$. Calculate the Instantaneous velocity of the car when t=15.