Name: _____ Date: _____

Problem 1. True of False: The center of the circle given by $(x+3)^2+(y+4)^2=9$ is the point $(3,4)$.

Problem 2. True of False: The graph of the line $x=-5$ is a vertical line.

Problem 3. True of False: In the function notation $y=f(x)$, x is the output.

Problem 4. True of False: The average rate of change of an increasing function is negative.

Problem 5. True of False: The function $f(x)=(\frac{1}{2}x)^2$ has a horizontal compression.

Problem 6. True of False: If a function is one-to-one, then its inverse exists.

Problem 7. Fill in the blank: The standard form of the equation of a circle with center (h,k) and radius r is: _____

Problem 8. Fill in the blank: Every line parallel to the line $y=3x-2$ has a slope equal to _____.

Problem 9. Fill in the blank: The average rate of change of f as x changes from a to b is _____.

Problem 10. Fill in the blank: A function is even if $f(-x)=$ _____.

Problem 11. Fill in the blank: The graph of $y=f(x+3)$ is found by shifting the graph of $y=f(x)$ three units to the _____.

Problem 12. Fill in the blank: To calculate $(f\circ g)(x)$, I plug _____ into _____.

Problem 13. Fill in the blank: A consistent system of equations has a _____.

Problem 14. Find the difference quotient of $f(x) = x^2 - 3x$.

Problem 15. State the distance formula.

Problem 16. State the midpoint formula.

Problem 17. State the average rate of change formula.

Problem 18. Find the center and radius of the circle: $x^2 + y^2 + 2x - 4y - 5 = 0$

Problem 19. Is $f(x) = x^2 + x^4$, even, odd or neither?

Problem 20. Given $f(x) = 2x + 1$ and $g(x) = 3x - 5$, find $(f \circ g)(x)$.