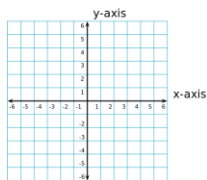UNIT 3 Function Review Sheet for TEST
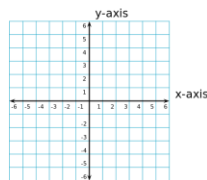
1. Evaluate: $f(x) = -2x^2 + 3x + 19$ for $f(-7)$

2. Evaluate: $f(x) = x^3 - 7x$ for $f(3)$

3. Evaluate: $f(x) = -9x + 13$ for $f(c + 7)$

4. Evaluate: $f(x) = x - 4$ and $g(x) = x^2 + 3x - 10$; Find $f(g(-8))$

5. Evaluate: $f(x) = 2x + 1$ and $g(x) = x^2 - 9$; Find $g(f(x))$

6. Write the parent function and sketch a graph for the following function types:
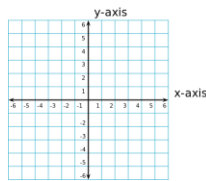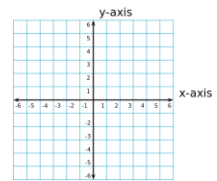
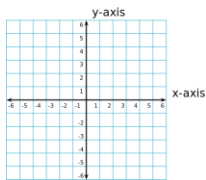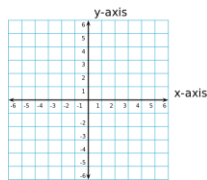   Absolute value: Quadratic: Exponential: Linear:
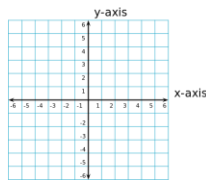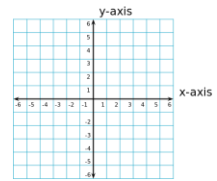

   Square root: Cube Root: Cubic: Logarithmic:

7. Identify the transformations from the parent function: $f(x) = -|x + 2| - 1$
8. Identify the transformations from the parent function: $f(x) = 4^{x-1} + 9$
9. Identify the transformations from the parent function: $f(x) = \sqrt{x - 2} + 9$
10. Identify the transformations from the parent function: $f(x) = \sqrt[3]{x + 1}$
11. Identify the transformations from the parent function: $f(x) = (0.5)2^x + 8$
12. Identify the transformations from the parent function: $f(x) = \log_2(x - 8) + 2$
13. Identify the transformations from the parent function: $f(x) = 20\left(\frac{2}{3}\right)^{x+7} - 5$

14. Complete this chart to describe end behavior of a polynomial:
15. Describe the end behavior: $f(x) = -12x + 4x^3 + 5$
16. Describe the end behavior: $f(x) = -x^4 + 5x$
17. Describe the end behavior: $f(x) = 6 - x^3 + 7x$
18. Describe the end behavior: $f(x) = 5x^2 + 6x + 1$
19. Write the domain of the function in interval notation:
$$f(x) = \log_3(x - 8) + 9$$
20. Write the domain of the function in interval notation:
$$f(x) = (x - 2)^2 - 9$$

	Even Degree	Odd Degree
Positive Leading Coefficient		
Negative Leading Coefficient		

21. Write the domain of the function in interval notation:: $f(x) = \sqrt{x - 7}$

22. Write the domain of the function in interval notation: $f(x) = 2^x + 3$

23. Write the range of the function in interval notation: $f(x) = 2^x + 3$

24. Write the range of the function in interval notation: $f(x) = \sqrt{x - 7}$

25. Write the range of the function in interval notation: $f(x) = (x - 2)^2 - 9$

26. Write the range of the function in interval notation: $f(x) = \log_4(x - 10) + 2$

27. Write the range of the function in interval notation: $f(x) = -|x - 7| - 2$

28. What conditions make a relation {set of ordered pairs} not a function?

29. What "test" can be used to determine whether or not a graph is a function?

30. What does it mean if a function is "one-to-one?"

31. What "test" can be used to determine whether or not a function is one to one?

32. Determine the inverse of the function: $f(x) = 3x - 1$

33. Determine the inverse of the function: $f(x) = \frac{1}{2}x + 7$

34. Determine the inverse of the function: $f(x) = \log_5(x + 4)$

35. Determine the inverse of the function: $f(x) = \log_2(x - 2) + 5$

36. Determine whether the function is even, odd, or neither: $f(x) = 3x^2 - 8$

37. Determine whether the function is even, odd, or neither: $f(x) = x^3 + x - 9$

38. Determine whether the function is even, odd, or neither: $f(x) = x^5 + x^3 - x$

39. Determine whether the function is even, odd, or neither: $f(x) = x(x + 1)$

40. Multiply: $(3x - 5)^2$

41. Multiply: $(4x - 1)(x + 8)$

42. Multiply: $(3x + 1)(x^2 - 7x + 5)$

43. Add: $(-7x^2 + 14x - 19) + (3x + 3 + 3x^2)$

44. Subtract: $(15x^2 - 8x + 20) - (17 + 7x - 5x^2)$

45. Add: $(4x^2 - 9x + 11) + (12 + 5x - 9x^2)$

46. Subtract: $(x^2 + x - 9) - (5 - 7x + x^2)$

47. Find the zeros of the polynomial: $f(x) = 2x^3 + 3x^2 - 65x + 84$

48. Find the zeros of the polynomial: $f(x) = x^3 - 7x^2 + 17x - 15$

49. Find the zeros of the polynomial: $f(x) = x^4 + 4x^3 - 3x^2 - 14x - 8$

50. Identify the domain and range, in interval notation, of the graph: