**Determine whether f is even, odd, or neither even nor odd.**

1. f(x) = 5x3 + 2x 2. f(x) = 3x4 + 2x2 - 5 3. f(x) = 8x3 - 3x2

4. f(x) = $\sqrt{x^{2}+4}$ 5. f(x) = $\sqrt[3]{x^{3}-x}$ 6. f(x) = $x^{3}-\frac{1}{x}$

**Sketch, on the same coordinate plane, the graphs of f for the given values of c. (Make use of symmetry, shifting, stretching, compressing, or reflecting.)**

7. f(x) = |x| + c; c = -3, 1, 3 8. f(x) = -x2 + c; c = -4, 2, 4 9. f(x) = 2$\sqrt{x}$ + c; c = -3, 0, 2

  

**If the point P is on the graph of a function f, find the corresponding point on the graph of the given function.**

10. P(0, 5); y = f(x+2) - 1 11. P(3, -1); y = 2f(x) + 4 12. P(3,-2); y = 2f(x-4) + 1

**Explain how the graph of the function compares to the graph of y = f(x). For example, for y = 2f(x+3), the graph of f is shifted 3 units to the left and stretched vertically by a factor of 2.**

13. y = 3f(x-1) 14. y = f(x+3) 15. y = f(x) + 3 16. y = f(x) - 3

**Sketch the graph of f.**

17. f(x) = $\left\{\begin{array}{c}3 if x\leq -1\\-2 if x >-1\end{array} \right. $



**The symbol** $\left⟦x\right⟧$ **denotes values of the greatest integer function. Sketch the graph of f.**

18. f(x) = $\left⟦x-3\right⟧$ 19. f(x) = $\left⟦x\right⟧$-3 20. f(x) = 2$\left⟦x\right⟧$

   

**Explain why the graph of the equation is not the graph of a function.**

21. x = y2

22. x = -|y|