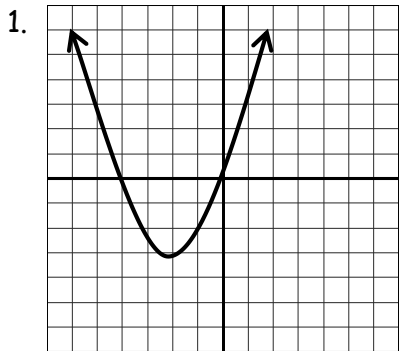


****Do all of the following problems in your notebook****

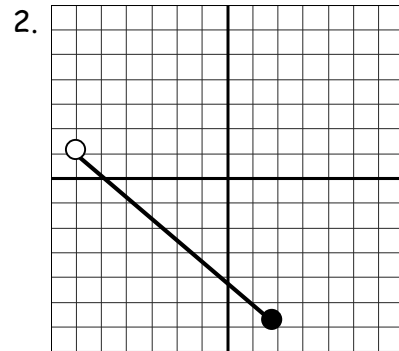
**Are the following functions? Yes or No.
 State the domain and range of each function in interval notation.**



Function:

Domain:

Range:



Function:

Domain:

Range:

Find the domain of the function and write your answer in interval notation.

3. $f(x) = -4x^3 + 7x^2$

4. $f(x) = \sqrt{x^2 - 16}$

5. $f(x) = \frac{x+5}{x^2-9x+14}$

6. $g(x) = \frac{10}{x^2-2x}$

7. $g(x) = \sqrt{x-10}$

8. $g(x) = \frac{3-x}{\sqrt{10x+5}}$

9. $h(x) = 7x + 12$

10. $h(x) = \frac{-5}{2x^2+10x+8}$

11. $h(x) = \frac{\sqrt{x}}{x}$

Use the following functions to answer the questions. Be sure to show all of your work.

$f(x) = x^2 - 4x + 12$

$g(x) = x - 2$

$h(x) = \frac{1}{x+6}$

12. $f(3) =$

13. $(f - g)(x)$

14. $h(g(x))$

15. $(f \circ g)(x)$

16. $g(f(2))$

17. $(f + g)(x)$

18. $(gh)(x)$

19. $\left(\frac{f}{g}\right)(x)$

20. $h(-6)$

Complete the following problems using your knowledge of inverses.

- ✓ Graph the following using your graphing calculator.
- ✓ Determine if the function is one-to-one.
- ✓ If so, find the inverse algebraically.

21. $f(x) = -2(x-4)^2 + 8$

22. $g(x) = -3 + \sqrt{x+1}$

23. $f(x) = x^3 + 4$

24. $f(x) = 2 + \sqrt{-x+3}$

25. $h(x) = (x+1)(x-3)$

26. $k(x) = 5x^5$

27. $f(x) = -\frac{3}{7}x + \frac{5}{7}$

28. $g(x) = \sqrt{2x-5}$

Find the domain of the functions and write your answers in interval notation.

29. $y = 3x^3 - 2x^2 + x - 10$

30. $y = \sqrt{2x^2 - 17x + 15}$

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

32. $f(x) = \frac{\sqrt{x^2-x-6}}{2}$

33. $g(x) = \frac{2x}{\sqrt{3x^2-2x-5}}$

34. $z(x) = \frac{10x-1}{8x^2-29x-12}$