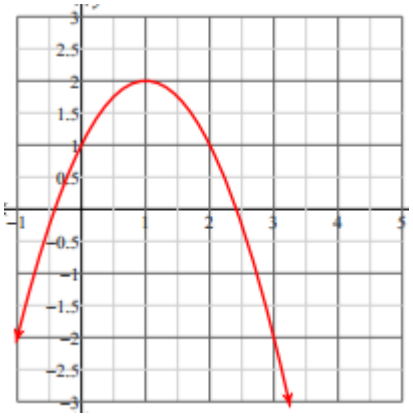
1. Solve $\frac{1}{4}(4-2x)-4=20+11$. [1]
2. Maria earns \$6 per hour babysitting for $b$ hours \$5 per lawn to mow l lawns. Write an expression that best represents the amount Maria earns in one day working both jobs. [2]
3. Simplify $8(4x-2)+g$. [2]
4. The area of a trapezoid is $A=\frac{1}{2}(b_1+b_2)h$. Solve the equation for $b_2$. [2]
5. Solve the inequality $-2x-7\leq -3$. [2]
6. Solve the inequality $4x+1\geq -7$ *or* $x+8>12$. [2]
7. What is the value of $f(x)=\frac{2}{3}x-3$ when $x=42$? [3]
8. Is the following situation discrete or continuous: The # of points scored in a basketball game. [3]
9. Draw a graph that represents your distance from school over time on your walk home if you walk for 10 minutes, stop to talk with a friend for 3 minutes, then run back to school to get your math book that you forgot. [3]
10. Draw a graph that is a function. Draw a graph that is not a function. (Remember vertical line test) [3]
11. At what x-value does it reach its maximum height? What is that maximum height?



[3]

12. Find the 8th term of the arithmetic sequence $5, 8, 11, 14, 17, \ldots$ [4]
13. Write an explicit rule for the sequence 2, 4, 6, 8… [4]
14. Find the first five terms of the sequence recursively defined as $a_1=12;\ a_n=a_{n-1}-5$ [4]
15. What is the y-intercept of $5x+12y=36$? [5]
16. What is the slope of the line that contains the points $(-7,1)$ and $(-3,19)$? [6]
17. Write two equations that represent a linear function. [6]
18. Write the slope-intercept form of the equation that contains the points $(3, 4)$ and $(-1, 6)$. [6]
19. Zach earns \$10 for every lawn he mows and \$15 for lawn he rakes. He deposits \$500 in the bank at the end of the summer. Write the equation that represents this situation. [7]
20. Graph the inequality $24x+12y<-12$. [7]
21. Graph the inequality $3x\geq -18$. [7]
22. Solve the system of equations $f(x)=\begin{cases}x+y=-1\\x-y=-7\end{cases}$. [11]
23. Zahra spent \$20.50 on 10 party favors for her party. The boys each received a puzzle book that cost \$1.75 each. The girls each received a magic trick that cost \$2.25 each. How many boys and how many girls attended the party? [12]
24. If $f(x)=|x|$ and $g(x)$ is $f(x)$ translated down 3 units, what would the equation be? [13]

25. Write an absolute value function that matches the diagram:

26. What would the vertex of the graph above be? [13]
27. What are the solutions to $3|x+6|=3$? [13]
28. What are the solutions of $9 \geq |x-6|-3$? [13]
29. Solve $\left|\frac{x}{3}\right|+2 \leq 4$. [13]
30. Solve $2|x+6|+3 \geq 29$. [13]
31. Simplify the expression $\left(\frac{1}{16}\right)^{-\frac{5}{2}}$ using rational exponents. [14]
32. Simplify the expression $9^{\frac{3}{2}}$ using rational exponents. [14]
33. Find the common ratio $r$ for the geometric sequence 3, 9, 27,... and find the next three terms. [15]
34. Write the explicit rule for the geometric sequence -5, -15, -45, -135, - 405 [15]
35. Find the degree of the polynomial: $10x^2y^2+5x^3+2$
36. Factor $9y^2+3y$ ? [17]
37. Multiply$(x-3)(x^2-2x+3)$. [18]
38. Write a polynomial that represents the area of a rectangle with sides of length $x+2$ and $x^2-2$. [18]
39. Find the area of the rectangle above if $x=3$ in. [18]
40. What is the product of $(4x+2)$ and $(x-3)$ ? [18]
41. Multiply $(3x-2)^2$. [18]
42. How would the graph of $y=x^2+2$ be affected if the function were changed to $y=x^2-3$? [19]
43. Compare the graphs of $f(x)=x^2$ and $g(x)=-x^2+3$. [19]
44. What are the x-intercepts of the graph of the function $(x+3)(x-7)=0$? [20]
45. Find the axis of symmetry of the graph of $y=2x^2-4x+3$. [20]
46. State the domain and range of the quadratic equation $y=(x+4)^2-1$. [21]
47. Factor: $x^2+3x-18$
48. Factor: $5x^2-12x+4$
49. Solve the equation $x^2=15-2x$. [21]
50. Solve $4x^2-9=0$ for x. [22]
51. Solve $3x^2+8x-2=0$ for x using the quadratic formula. [22]
52. Which number completes $x^2+10x+$ ____ to form a perfect square trinomial? [22]