1.   Solve $3(4 - 2x) = 4(x - 4) + 2x + 11$.   [1]
2.   What are the terms of an expression?   [2]
3.   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]
4.   Write two expressions equivalent to $8(4x - 2) + g$.   [2]
5.   The area of a trapezoid is $A = \frac{1}{2}(b_1 + b_2)h$. Solve the equation for b_2.   [2]
6.   Solve the inequality $2x - 7 \le -3$.   [2]
7.   Solve the inequality $4x + 3 \ge -7$.   [2]
8.   What is the value of $f(x) = \frac{2}{3}x - 3$ when $x = 42$?   [3]
9.   Describe a situation that would have a discrete graph.   [3]
10.   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]
11.   What are the characteristics of the graph of a function?   [3]
12.   Sketch a parabola in the first quadrant that opens down. Scale the axes however you would like. At what x-value does it reach its maximum height? What is that maximum height?   [3]
13.   Find the 8th term of the arithmetic sequence $5, 8, 11, 14, 17, \ldots$ [4]
14.   Write an explicit rule for the sequence -5, -15, -45, -135, -405,...   [4]
15.   Find the first five terms of the sequence recursively defined as $a_1 = 12; a_n = a_{n-1} - 5$ [4]
16.   What is the y-intercept of $5x + 12y = 36$?   [5]
17.   What is the slope of the line that contains the points $(7,1)$ and $(-3,19)$?   [5]
18.   Write the point-slope form of the equation that has a slope of -2 and passes through the point $(5, -3)$.   [6]
19.   Write the standard form of the equation that passes through the point $(-4, 3)$ with a slope of 5.   [6]
20.   Write two equations that do NOT represent a linear function.   [6]
21.   Write the slope-intercept form of the equation that contains the points $(3, 4)$ and $(-1, 6)$.   [6]
22.   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]
23.   Graph the inequality $6x + 15y > -9$.   [7]
24.   Graph the inequality $3x > -18$.   [7]
25.   Solve the system of equations $f(x) = \begin{cases} x + y = -1 \\ x - y = -7 \end{cases}$.   [11]
26.   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]
27.   Describe the graph of the function $p(x) = (x - 3)(x - 1)(x + 2)$. What are its x-intercepts? What is If $f(x) = |x|$ and $g(x)$ is $f(x)$ translated down 3 units, what would the equation be?   [13]
28.   What would the equation of an absolute value function that had been shifted to the left look like?   [13]
29.   What would the vertex of the graph above be?   [13]
30.   What are the solutions to $3|x + 6| = 3$?   [13]
31.   What are the solutions of $9 \ge |x - 6| - 3$?   [13]
32.   Solve $\left|\frac{x}{3}\right| + 2 \le 4$.   [13]
33.   Solve $2|x + 6| + 3 \ge 29$.   [13]
34.   Simplify the expression $\left(\frac{2}{3}\right)^{-\frac{5}{2}}$ using rational exponents.   [14]
35.   Simplify the expression $9^{\frac{3}{2}}$ using rational exponents.   [14]

36. Simplify the expression $\sqrt{(9w^2)^3} \sqrt[4]{(9w^3)^4}$.   [14]
37. Find the common ratio r for the geometric sequence 3 9, 27,... and find the next three terms.   [15]
38. Write the recursive rule for the geometric sequence 88, 44, 22,... .   [15]
39. Write the explicit rule for the geometric sequence 3, 6, 9,... .   [15]
40. Write an exponential function that includes the points (4, -48), (-1, -1.5).   [15]
41. State a, b, and the y-intercept of the exponential function $f(x) = 5(1.5)^x$.   [15]
42. Describe the transformation of g$(x) = 3(2)^x$ relative to $f(x) = 2^x$.   [15]
43. A bacteria population starts at 2,032 and decreases at about 15% per day. Write a function
     representing the number of bacteria present each day.   [16]
44. Ted's comic book collection, which was worth $1300 five years ago, has been increasing in value by
     12% per year since then. Write an expression that gives the current value of his collection.   [16]
45. The balance of an account earning simple interest is $1000 when the account is opened, $1075
     after one year, and $1150 after two years. How does the balance change from year to year?   [16]
46. What is the degree of a polynomial? How do you describe a polynomial based on the number of
     terms?   [17]
47. Write an expression equivalent to $9y^2 + 3y$?   [17]
48. Multiply $(x - 3)(x^2 - 2x + 3)$.   [18]
49. Write a polynomial that represents the area of a rectangle with sides of length $x + 2$ and $x^2 - 2$. [18]
50. Find the area of the rectangle above if $x = 3$ in.   [18]
51. What is the product of $(4x + 2)$ and $(x - 3)$?   [18]
52. Multiply $(3x - 2)^2$.   [18]
53. How would the graph of $y = x^2 + 2$ be affected if the function were changed to $y = x^2 - 3$?   [19]
54. Compare the graphs of $f(x) = x^2$ and $g(x) = -x^2 + 3$.   [19]
55. What are the x-intercepts of the graph of the function $(x + 3)(x - 7) = 0$?   [20]
56. Find the axis of symmetry of the graph of $y = 2x^2 - 4x + 3$.   [20]
57. State the domain and range of the quadratic equation $y = (x + 4)^2 - 1$.   [20]
58. A flower bed with dimensions x by 6 is surrounded by a walkway with dimensions $2x + 1$ by $x - 3$.
     Write a polynomial to represent the area of the walkway.   [21]
59. Solve the equation $x^2 = 15 - 2x$.   [21]
60. Solve $4x^2 - 9 = 0$ for x.   [22]
61. Solve $3x^2 + 8x - 2 = 0$ for x using the quadratic formula.   [22]
62. Which number completes $x^2 + 10x + \underline{\quad}$ to form a perfect square trinomial?   [22]
63. The height in feet of a baseball above the ground is given by the equation $h(t) = -16t^2 + 80t + 3$
     where t is the time in seconds after the baseball is hit. How long does it take the baseball to reach
     the ground?   [22]
64. The baseball was hit when it was 3 feet above the ground. After how many seconds is the baseball
     back at a height of 3 feet?   [22]
65. its y-intercept? What shape does it have?   [24]
66. Sketch examples of all of the following families of functions: linear, constant, quadratic,
     exponential, step, absolute value, cubic, square root, cube root.   [24]
67. Find the equation for the inverse relation of $y = 2x^2 - 1$?   [24]