

Name: _____
Date: _____
Class: _____

Algebra
Review
Graded Homework 31

Show all of your work for every problem. The numbers in the brackets are the points that each problem is worth. Multiple Choice Problems are worth 3.
NO WORK = ZERO CREDIT

1) [3] Find the $z(6)$ for the following recursive sequence: $z(0) = 10$, $z(n) = 2(z(n - 1)) - 3$.

2) [3] A plumber charges customers based on the following information. All jobs come with a minimum charge of \$150 which covers the first half hour. After that half hour his rate is \$100 per hour. Create a function, $g(x)$, which can be used to find the total cost he charges a customer after a call that is x total hours.

3) [4] Graph the following:
 $t(x) = x^2 + 4x + 2$ when $x \leq -1$ and $|x - 2| + 4$ when $x > -1$, explain what $t(-1)$ would be.

4) [3] Solve and graph: $14 - 4x \leq 26$

5) [3] Graph the following function: $y(x) = \sqrt{x - 2} - 4$

6) [4] Explain the shift that would occur from $f(x)$ to $g(x)$ using the following two functions:

$$g(x) = x^2 - 5x + 13.75, f(x) = x^2 + 7x + 5.75$$

7) [3] Create a box plot for the following set of data, which is the amounts of snowfall for the past 3 weeks.

1.0, 0, 0.1, 2.2, 0, 0, 0.5, 0.75, 0.2, 0, 1.0, 1.1, 4.3, 0, 0, 1.0, 1.1, 0, 3.2, 2.1 0.6

8) [3] Factor completely: $x^4 + 2x^2 - 24$

9) [4] Find the zeros of the function: $g(x) = 5x + (2x - 1)(x - 3) - 27 - x^2$