Prerequisites Worksheet

**Even and Odd Functions**

1. Complete each graph, assuming that a) is even and b) is odd:  
   A graph of a function

   Description automatically generated
2. Prove whether the following functions are even, odd or neither:  
   

**Piecewise Functions**

1. Graph each of the following functions:  
   A white background with black and white clouds

   Description automatically generated  
   A grid of white squares

   Description automatically generated A grid of white squares

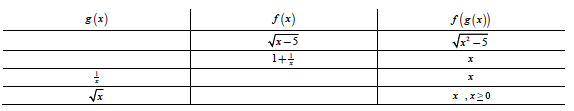
   Description automatically generated
2. Determine a piecewise function for each of the following graphs:  
   A graph of a line and a point

   Description automatically generated
3. An earthquake that occurred at 9:17AM cracked a water tower in a small town. Water began leaking out of the tower at rate 12 cm3/min for the first 25 minutes, then the rate increased to 24 cm3/min for the next 30 minutes. It took 45 minutes before the leak was fixed, and in that final 45 minutes, the water was leaking at a rate of 20 cm3/min. Write a piecewise function for the amount of water leaking out of the tower as a function of time.

**One to one Functions**

1. Explain in your own words what a one-to-one function is.

**Composite Functions and Inverse Functions**

1. What are the 3 domain issues you must remember for this course?
2. What are the domains of the following functions?  
   
3. Suppose and . Find each of the following  
   a) b)   
     
     
     
     
   c) d)   
     
     
     
     
   e) f)
4. Complete the following table:  
   
5. Find and determine their domain.  
   a) and   
     
     
     
     
   b) and
6. Explain how to find an inverse of a given function algebraically.
7. Explain how to verify/prove that two functions are inverses of each other.
8. Find the inverse of each following functions and determine their domain and ranges so that they are both functions:  
   a b)   
     
     
     
     
     
     
     
     
   c) d)   
     
     
     
     
     
     
     
     
     
     
   e) f)
9. Verify that the function for is its own inverse.
10. Without using a calculator, evaluate the following expressions:  
    a) b)

**Greatest Integer Function**

1. Determine the following values for
2. Make sure you know how to draw the Greatest Integer function precisely.