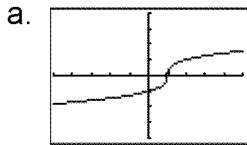


## Chapter 1---Functions Review

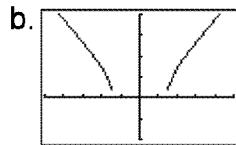
Determine which of the following are functions, have inverse functions, & are one-to-one.



Function? \_\_\_\_\_

Has an Inverse  
function? \_\_\_\_\_

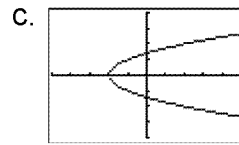
one-to-one? \_\_\_\_\_



Function? \_\_\_\_\_

Has an Inverse  
function? \_\_\_\_\_

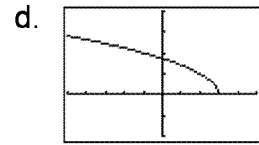
one-to-one? \_\_\_\_\_



Function? \_\_\_\_\_

Has an Inverse  
function? \_\_\_\_\_

one-to-one? \_\_\_\_\_



Function? \_\_\_\_\_

Has an Inverse  
function? \_\_\_\_\_

one-to-one? \_\_\_\_\_

2. Determine what functions are implicitly defined:

a.  $x^2 + 7 = y^2$

b.  $9y^2 - 12xy + 4x^2 = 49$

c.  $y^2 - 4xy + 4x^2 = 64$

d.  $-7x^2 + 70xy - 175y^2 = -35$

3. Fill-in a table below for the following parametric function (write at least 5 points) then eliminate the parameter:

$x(t) = t + 5$

$y(t) = t^2 + 7$

$0 < t < 8$

$t$	$x(t)$	$y(t)$

4. Draw the basic sketches of the graphs of the basic functions listed below  
Identify the domain and range for each

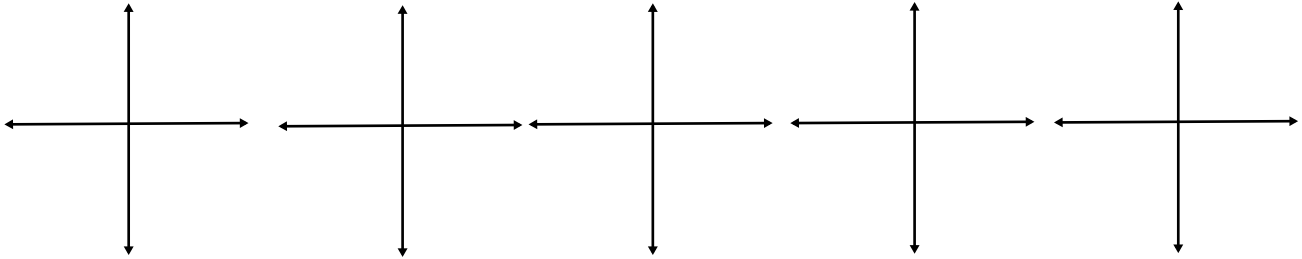
a.  $f(x) = x + 2$

b.  $f(x) = -2x^2$

c.  $f(x) = x^3$

d.  $f(x) = \sqrt{x+3}$

e.  $f(x) = |x| - 4$



D: \_\_\_\_\_ D: \_\_\_\_\_ D: \_\_\_\_\_ D: \_\_\_\_\_ D: \_\_\_\_\_

R: \_\_\_\_\_ R: \_\_\_\_\_ R: \_\_\_\_\_ R: \_\_\_\_\_ R: \_\_\_\_\_

5. Determine whether the function is even, odd, or neither. Be sure to prove each algebraically.

a.  $f(x) = x + 7$

b.  $f(x) = x^2 - 8x + 3$

c.  $f(x) = x^3 - 2x$

d.  $f(x) = 3x^3 - x - 8$

e.  $f(x) = 5x^2 + 2$

f.  $f(x) = 5x^4 - 2x^2 + 1$

6. Given  $f(x) = 3x - 2$  and  $g(x) = x^2 - 2x + 7$  Evaluate & state domain & Range

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

b.  $(fg)(x)$

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

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

$f(x) + g(x) =$  \_\_\_\_\_

$f(x)g(x) =$  \_\_\_\_\_

$f(g(x)) =$  \_\_\_\_\_

$g(f(x)) =$  \_\_\_\_\_

D: \_\_\_\_\_

D: \_\_\_\_\_

D: \_\_\_\_\_

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