IPC FUNCTIONS & TRANSFORMATIONS REVIEW F2016 **Name:**_____ **Per:**_____

1. Given the original function f(x) describe all the transformations that would occur to g(x):

a. $f(x) = \sqrt{x}$ $g(x) = \sqrt{4x}$

b. $f(x) = e^x$ $g(x) = -5e^x$

Vertical Stretch by 5
Reflect over X

c. $f(x) = x^3$ $g(x) = (-x+3)^3 + 7$

d. $f(x) = |x|$ $g(x) = .25|-x-1| - 5$ $\frac{1}{4}$

Vertical Shrink by 4
Reflect over y-axis
Rt. 1 Down 5

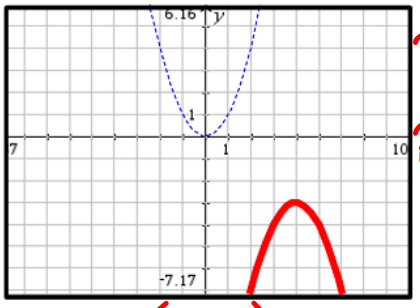
e. $f(x) = \ln(x)$ $g(x) = -\ln\left(\frac{x}{2}\right)$ $\frac{1}{2}x$

Reflect over x
Horizontal Stretch by 2

f. $f(x) = \sqrt[3]{x}$ $g(x) = -\sqrt[3]{-x}$

2. Based in the graph of the original function write an equation that represents the graph of the transformed function (bold lines).

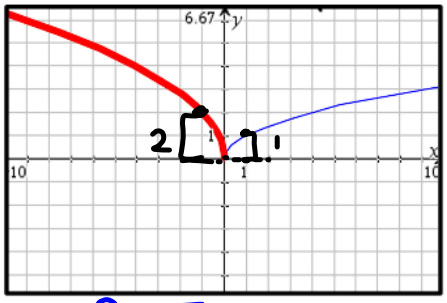
a.



Reflect over x
Rt. 4
Down 3

g(x) = $-(x-4)-3$

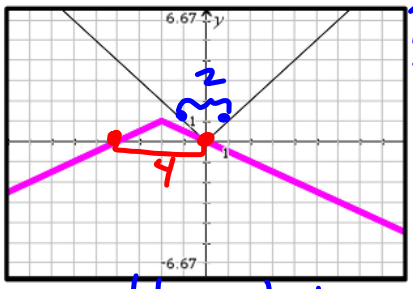
b.



Reflect over y
Vert. Stretch by 2

g(x) = $2\sqrt{-x}$

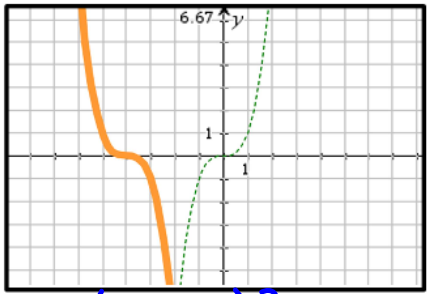
c.



Ref. over x
Horiz Stretch by 2
Left 2
up 1

g(x) = $-\left|\frac{1}{2}x+2\right|+1$

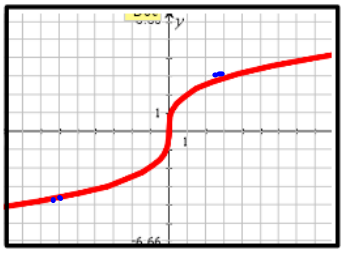
d.

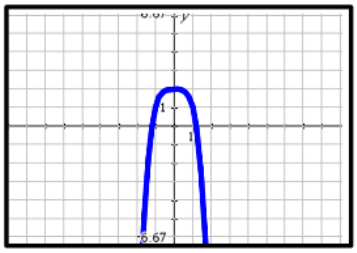


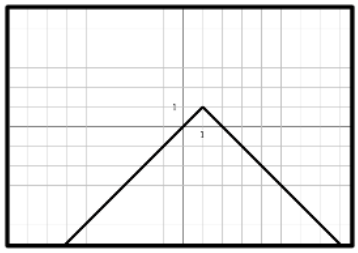
g(x) = $(-x+4)^3$

3. Based on the given graph determine if the function is ***even, odd*** or ***neither***.

a. b. c.







ODD EVEN Neither

4. Determine if the function is ***even, odd*** or ***neither***. **Justify your answer either algebraically or in sentence form.**

f(-x)

a. $f(x) = -5x^3 + 9|x|$

$f(-x) = -5(-x)^3 + 9|-x|$

Neither $= 5x^3 + 9|x|$

b. $f(x) = 9(x+2)(x-2) + 5$ → $9(x^2-4)+5$

→ $f(x) = 9x^2 - 31$

$9x^2 - 36 + 5$

eval. → $f(-x) = 9x^2 - 31$ EVEN

c. $f(x) = -x^5 - 9x^3 + \frac{1}{x}$

ODD

5. Complete the graph so that the function is the indicated type.

Pass the vertical line test

a. Odd b. Neither c. Even