Math 041 Assignment 1.9 Name_____

DIRECTIONS Give complete solutions to the following problems be sure to provide all the necessary steps to support your answers.

1. Consider the relations $f=\{(1,2),(2,3),(3,3)\}, g=\{(1,0)(2,3),(3,2),(4,8)\}$

a. Determine if the given relations represent e to one functions Give reason for your answer Ans_____

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b) Find $f^{-1}=$ Ans_____

c) Find $g^{-1}=$ Ans_____

d. Determine if the inverse relations in b and c represent functions Ans_____

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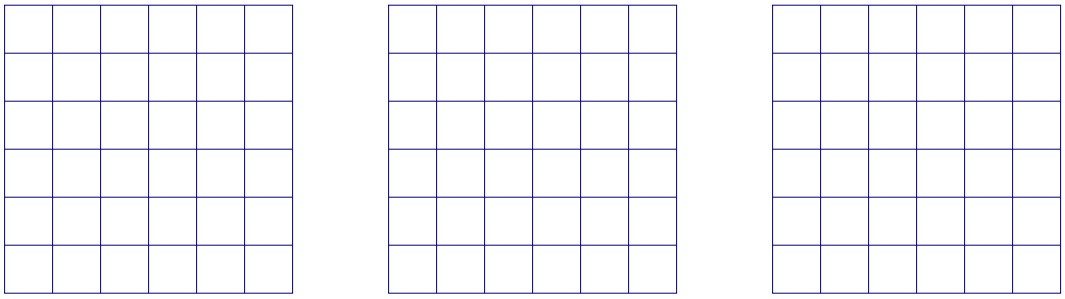
2. Let $f(x)=x^2,\ g(x)=\frac{1}{x},\ h(x)=x^3$

Use the horizontal line test to determine which of the functions above are one to one.

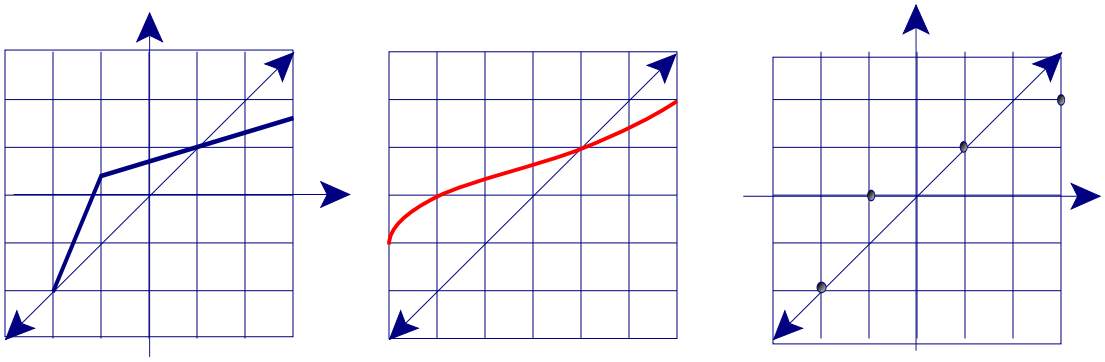


3. $\text{Let } f(x)=x-3,\ g(x)=\frac{1}{2}x-3$

a) Find $(f\circ g)(x)=$ Ans_____

b) Find $(g\circ f)(x)=$ Ans_____

4. The graph of a one to one function is given, produce the graph of the inverse function of on the same grid.



5. let $f(x)=x^2+1,\ x\geq 0,\ \ g(x)=\sqrt{x-1}$

a) Find $(f\circ g)(x)=$ Ans_____

b) Find $(g\circ f)(x)=$ Ans_____

c) Find $f^{-1}(x)=$ Ans_____

d) Find $g^{-1}(x)=$ Ans_____

6. Graph the given functions on the grid below. Be sure to use an appropriate grid size.

$f(x)=x^2+2x,\ x\geq -1,\ \ g(x)=\sqrt{x+1}-1$