Algebra of Functions   Name:_____

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

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

a)   Find $(f+g)(2) =$ Ans_____

b)   Find the domain of $f+g$ Ans_____

c)   Find the domain of $\dfrac{f}{g}$ Ans_____

d)   Find the range of of $f+g$ Ans_____
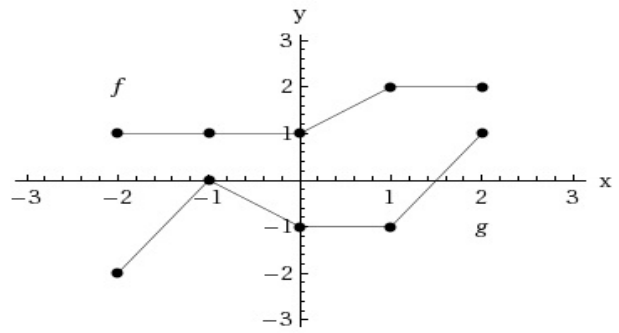
e)   Find the range of $\dfrac{f}{g}$ Ans_____

2.   Let $f(x) = x^2$, $g(x) = 2x - 3$

a)   Find $(f+g)(2) =$ Ans_____

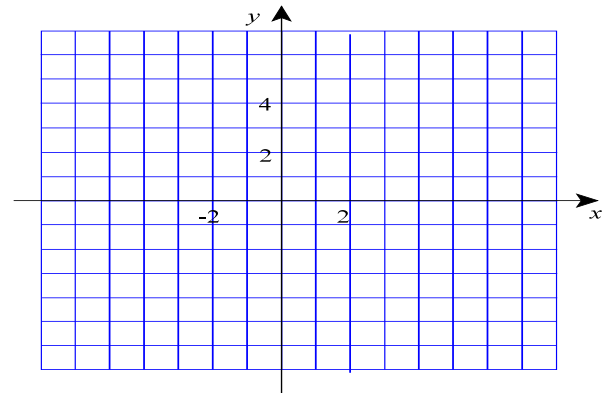b)   Find $(f+g)(x)$ Ans_____

c)   Find $\left(\dfrac{f}{g}\right)(x)$ Ans_____
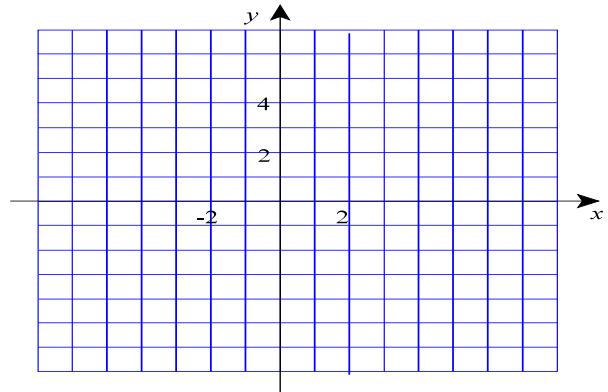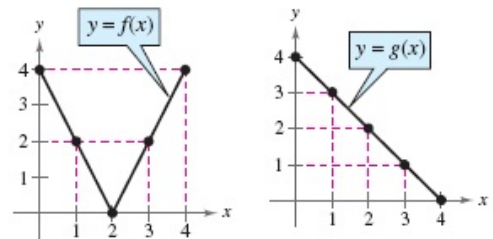
3.   The graphs of f and g are shown above.

a.   Produce the graphs of $f+g$

b.   Produce the graphs of $f-g$

5.   Use the graphs of f and g to find

$y = f(x)$

$y = g(x)$

a.   Find an expression for $y = f(x)$ Ans_____

b.   Find an expression for $y = g(x)$ Ans_____