Function Operations

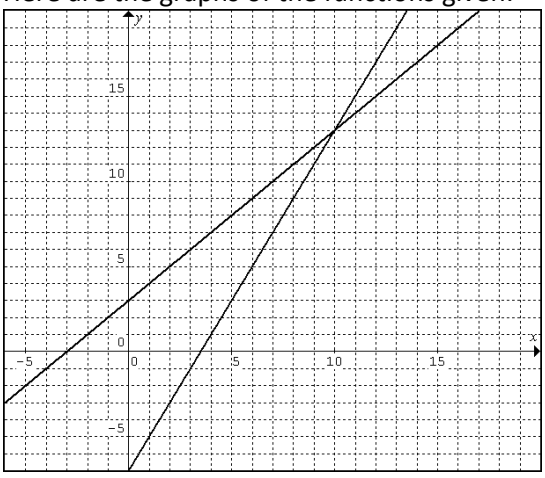
Given the functions find $(f+g)(x)$ and $(f-g)(x)$.

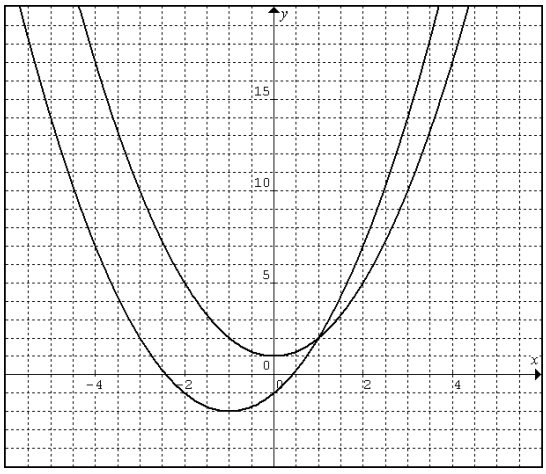
$f(x)=2x-7$ $\quad g(x)=x+3$ $\qquad f(x)=x^2+1$ $\quad g(x)=x^2+2x-1$

What is:

$(f+g)(3)$ $\qquad (f-g)(1)$

Here are the graphs of the functions given:



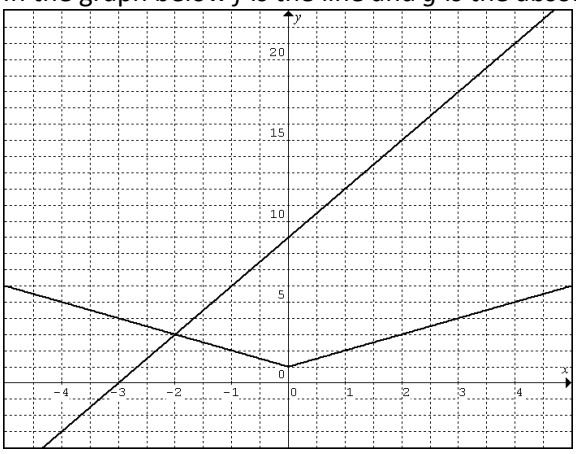


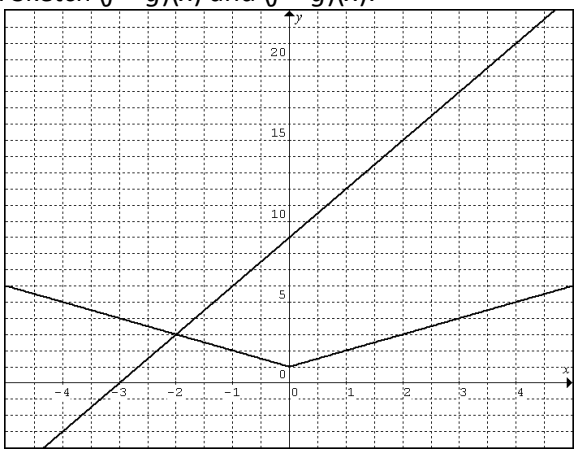
Using the graphs, determine:

$(f+g)(0)$ $\qquad (f+g)(0)$

$(f-g)(1)$ $\qquad (f-g)(1)$

In the graph below f is the line and g is the absolute value graph. Sketch $(f+g)(x)$ and $(f-g)(x)$.





Students at the school decide they are going to sell t-shirts as a fund raising activity. If their fixed costs are $250, the cost per t-shirt is $4, and they intend to sell shirts for $10 per shirt,

a) Write an equation for cost (C), revenue (R), and profit (P)
b) How many t-shirts do they need to sell to make a profit?
c) What is the domain and range of the functions in this problem?

Find $(f \bullet g)(x)$ and state the domain and range if $f(x) = \sqrt{x+3}$ and $g(x) = \sqrt{x-3}$.

Find $\left(\frac{f}{g}\right)(x)$ and state the domain and range if $f(x) = x+2$ and $g(x) = x^2 + 9x + 14$.

With each swing a pendulum loses 3% of its amplitude due to friction. If the amplitude can be modelled by $A(t) = 15\cos(t)$ without friction, create a function to model the actual amplitude of the pendulum. How long will it be before the pendulum's amplitude is less than 12ft?

$(f \pm g)(x)$ HW: pg. 483 #1-4,6-8,11-13

$(f \bullet g)(x)$ & $\left(\frac{f}{g}\right)(x)$ HW: #1-3,7,8,12 (use Graphing Calc)