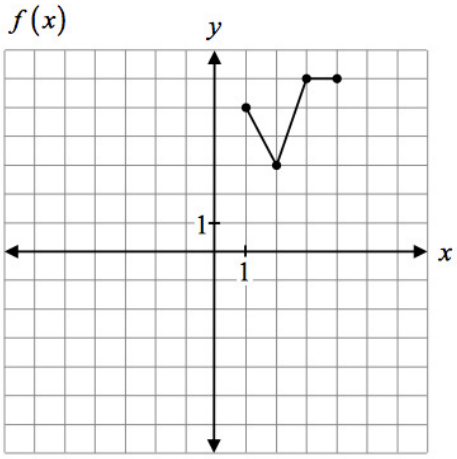
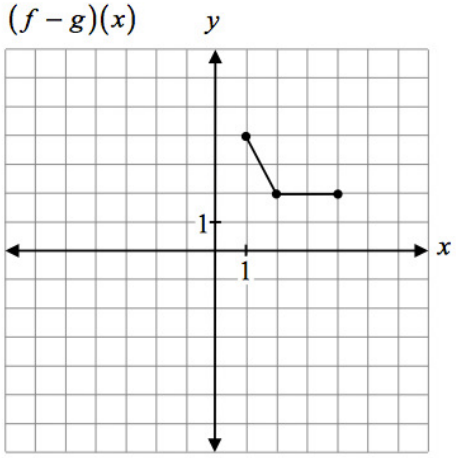
Combining Functions

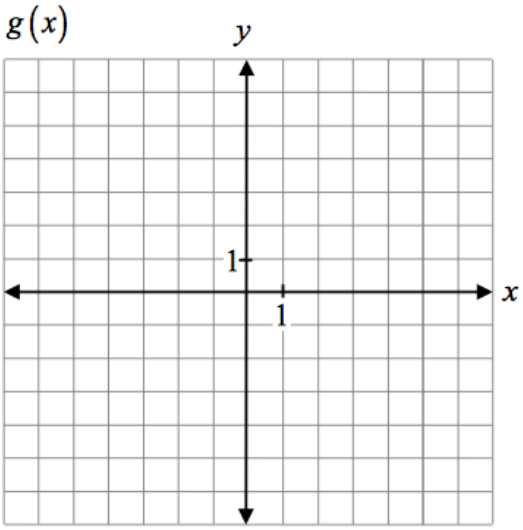
January 2014

Question 10 2 marks

Given the graphs of $f(x)$ and $(f-g)(x)$, sketch the graph of $g(x)$.





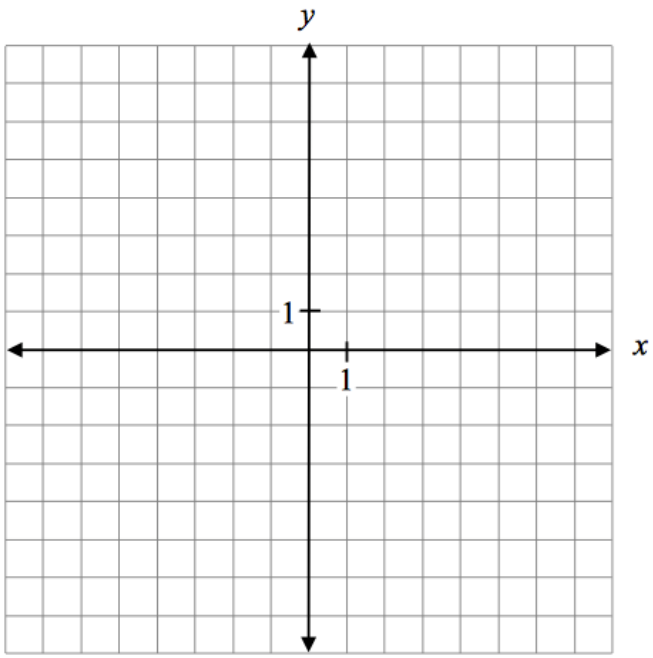


Question 15 1 mark

If $f(x) = x^3$ and $g(x) = 2x - 3$, what is the value of $\left(\frac{f}{g}\right)(-1)$?

Question 29 3 marks

Given $f(x) = x^2 - 1$ and $g(x) = \sqrt{x+1}$, sketch the graph of $y = f(g(x))$ and state its domain.



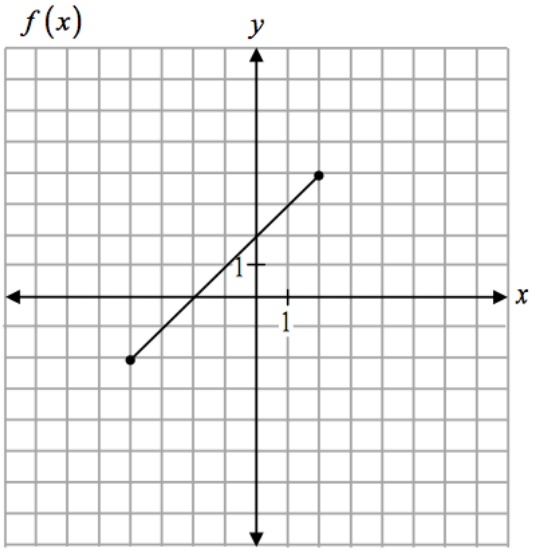
June 2013

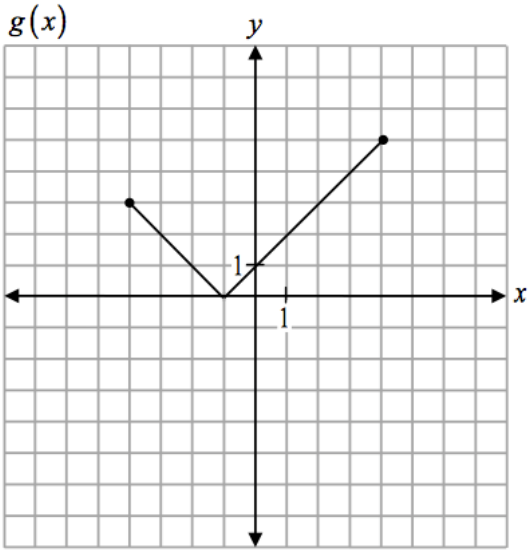
Question 9 1 mark

Given that $f(x) = \{(1,3),(2,5),(3,4),(4,2)\}$, find $f(f(3))$.

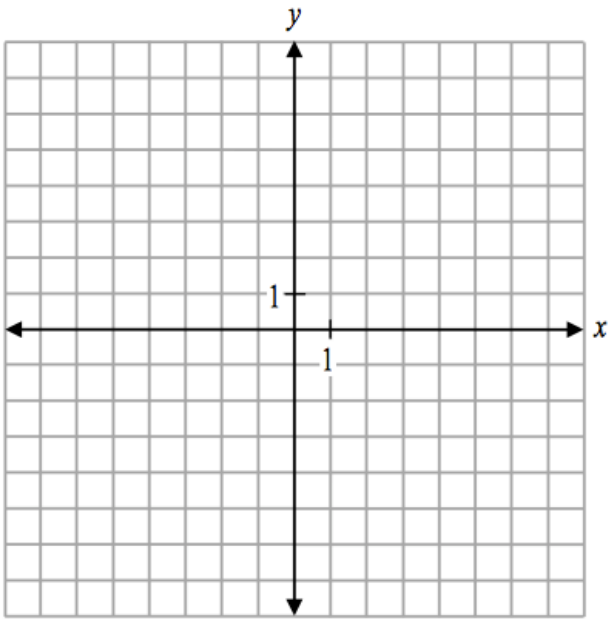
Question 10 2 marks

Given the graph of $f(x)$ and $g(x)$ below,





Sketch the graph of $y = f(x) - g(x)$



Question 26 2 marks

Given $f(x) = 3$ and $g(x) = x + 2$, determine the domain and range of $h(x) = \frac{f(x)}{g(x)}$.

Question 41 2 marks

Given $f(x) = \sqrt{x - 2}$ and $g(x) = 3x$, write the equation for $h(x) = f(g(x))$.

What are the restrictions on the domain of $h(x)$?
Explain your reasoning.

Question 45 2 marks

Given $f(x) = x - 1$ and $g(x) = x^2$, write the equation of $y = f(g(x))$ and sketch the graph.