Name: _____ Period: _____ Score: _____/??

PC 1 (part 2) Review

1) Find and fully simplify the difference quotient for the function g below. $\frac{g(x+h)-g(x)}{h}$, $h \neq 0$

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

2) Find and fully simplify the difference quotient for the function f below. $\frac{f(x+h)-f(x)}{h}$, $h \neq 0$

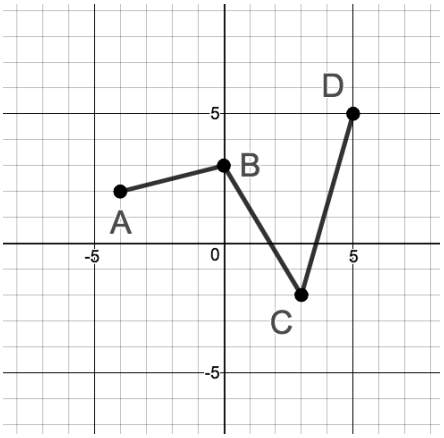
$$f(x) = x^2 - 22x$$

3) Point $B(-9,5)$ is on the graph of $y = f(x)$. Determine the location of point B' after the transformation shown. Describe the transformation steps in detail.

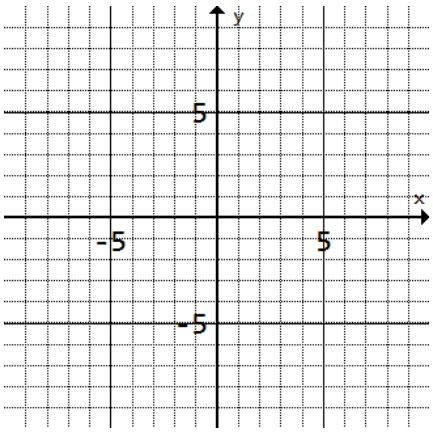
a) $f\big((x-2)\big)+5$

b) $-5f\left(-\frac{1}{3}(x+4)\right)-8$

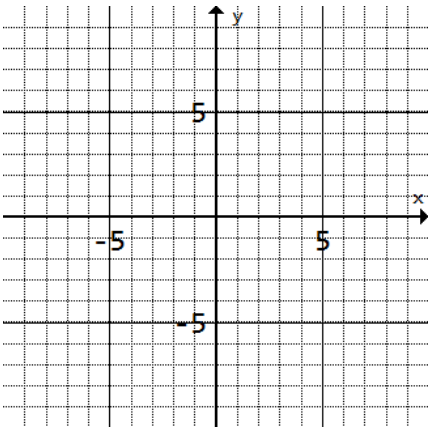
$h(x)$ is below



4) Graph $-2h(x-3)+2$



5) Graph $h(-\frac{1}{2}(x-1))$



6) Given $f(x) = -2x^2$,

a) Find the average rate of change from 4 to 6.

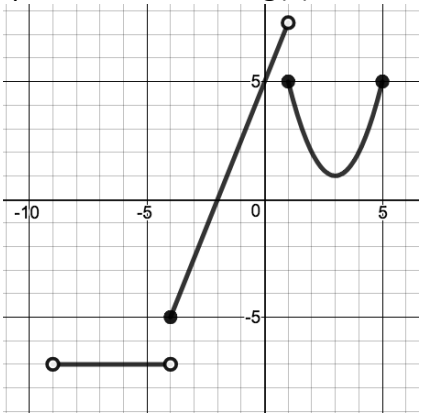
b) Find an equation of a secant line through the points $(4, f(4))$ and $(6, f(6))$

7) Given $g(x) = x^2 + 3x$,

a) Find the average rate of change from 2 to 5.

b) Find an equation of a secant line through the points $(2, f(2))$ and $(5, f(5))$

8) a) Write the definition of the piecewise function g(x) shown.



9) Use the graph of g(x) to evaluate the following:

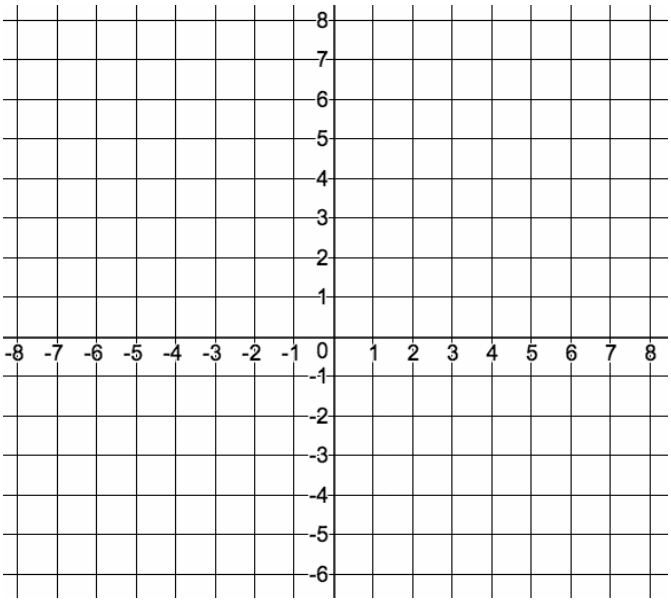
a) Evaluate $g(0)$

b) Evaluate $g(-4)$

c) Solve $g(x) = 1$. Write as a set.

10) Graph the piecewise function

$$f(x) = \begin{cases} (x+3)^2 - 4 & if -5 < x < -2 \\ 4 & if -2 \le x < 1 \\ -\frac{1}{2}x + 3 & if\ x \ge 1 \end{cases}$$



11) Use the graph of g(x) to evaluate the following:

a) Evaluate $f(0)$

b) Evaluate $f(-4)$