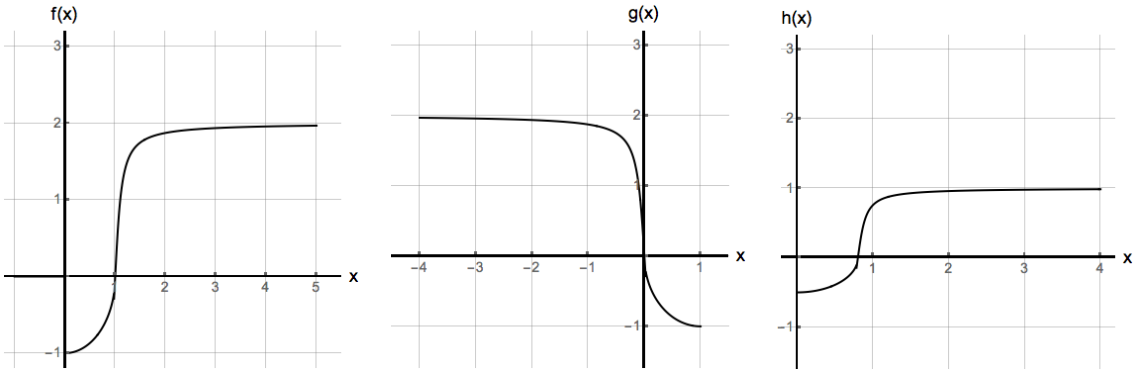
**8**. [9 points]

**a**. [4 points] Let $f(x)$, $g(x)$ and $h(x)$ be the functions shown below




Find formulas for the functions $g(x)$ and $h(x)$ as transformations of the function $f(x)$. A list of possible answers is shown below. If the correct answer is not included in the list, write your own formula in terms of transformations of the function $f(x)$.

| | | | |
|---|---|---|---|
| $\frac{1}{2}f\left(\frac{4}{5}x\right)$ | $-f(x+1)$ | $f(-x-1)$ | $2f\left(\frac{5}{4}x\right)$ |
| $f(-x+1)$ | $2f\left(\frac{4}{5}x\right)$ | $\frac{1}{2}f\left(\frac{5}{4}x\right)$ | $-f(x-1)$ |

$g(x) =$_____ $h(x) =$_____

**b**. [5 points] A bookstore keeps an e-mail list of its regular customers. The list had 250 and 750 e-mail addresses in 2004 and 2010 respectively. Let $M(t)$ be the number of e-mail addresses in the list $t$ years after 2000. Suppose $M(t)$ is a power function. Find a formula for $M(t)$. Your answer must be written in **exact form**. Show all your work.

$M(t)=$_____