1. Sketch graphs for each of the following functions. (Label all points at the end of each interval).

a) $$f(x)=\begin{cases}-2, & x\le -4\\ x+2, & -4<x\le 1\\ x^2+2, & x>1\end{cases}$$

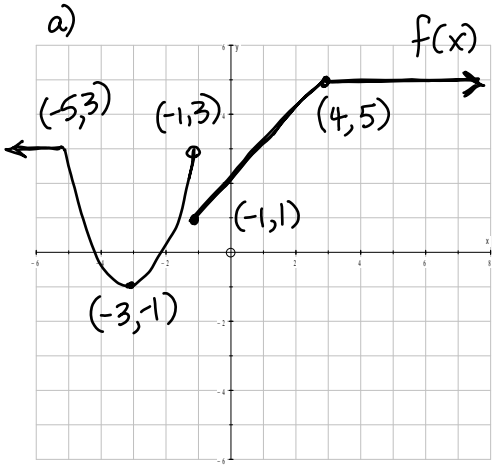
b) $$g(x)=\begin{cases}-2x+1, & x\le -1\\ 2x^3 & -1<x<1\\ \sqrt{x-1}+2, & x\ge 1\end{cases}$$

c) $$h(x)=\begin{cases}\left|x^2-4\right|, & x\in(-\infty,0]\\ \frac{1}{2}x+4, & x\in(0,2)\\ -x+4, & x\in[2,+\infty)\end{cases}$$

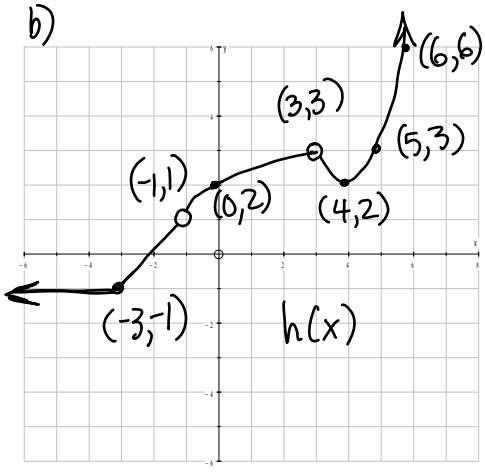
d) $$p(x)=\begin{cases}2\sqrt{x+3}-1, & x\le -1\\ \left|x-1\right|, & x>-1\end{cases}$$

2. State the equations that define each of the graphs shown below.

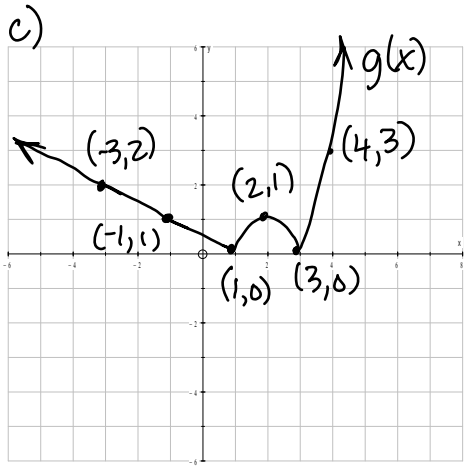
a)

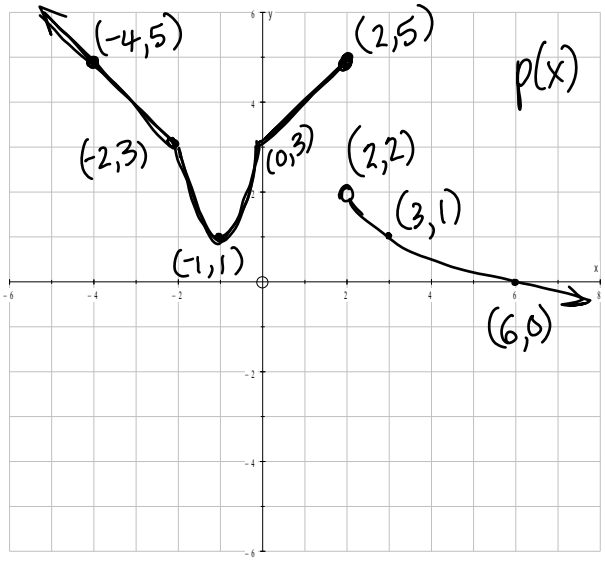


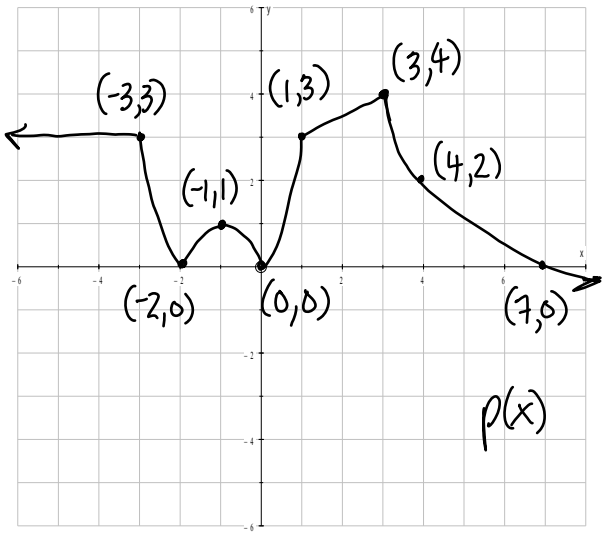
b)

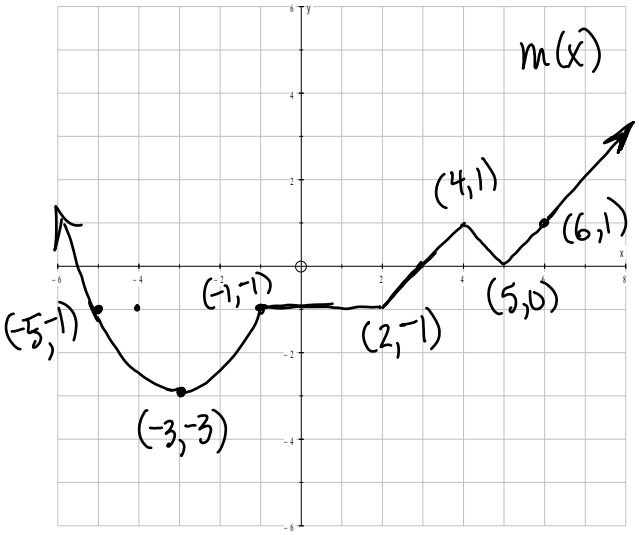


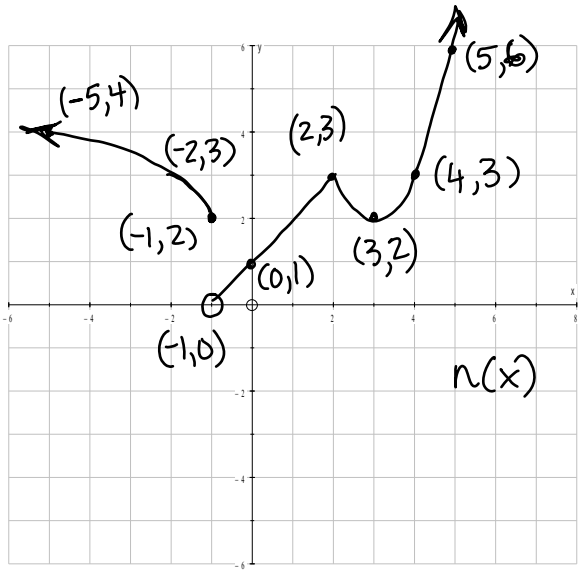
c)




(-4,5)
(2,5)
p(x)
(-2,3)
(0,3)
(2,2)
(3,1)
(-1,1)
(6,0)


(-3,3)
(1,3)
(3,4)
(4,2)
(-1,1)
(-2,0)
(0,0)
(7,0)
p(x)


m(x)
(4,1)
(6,1)
(-1,-1)
(5,0)
(-5,-1)
(2,-1)
(-3,-3)


(5,6)
(-5,4)
(2,3)
(-2,3)
(4,3)
(-1,2)
(3,2)
(0,1)
(-1,0)
n(x)