Name:_____Date:_____Period:___

Decide if these functions open upwards/downwards, the *y*-intercept, and find the absolute maximum or absolute minimum.

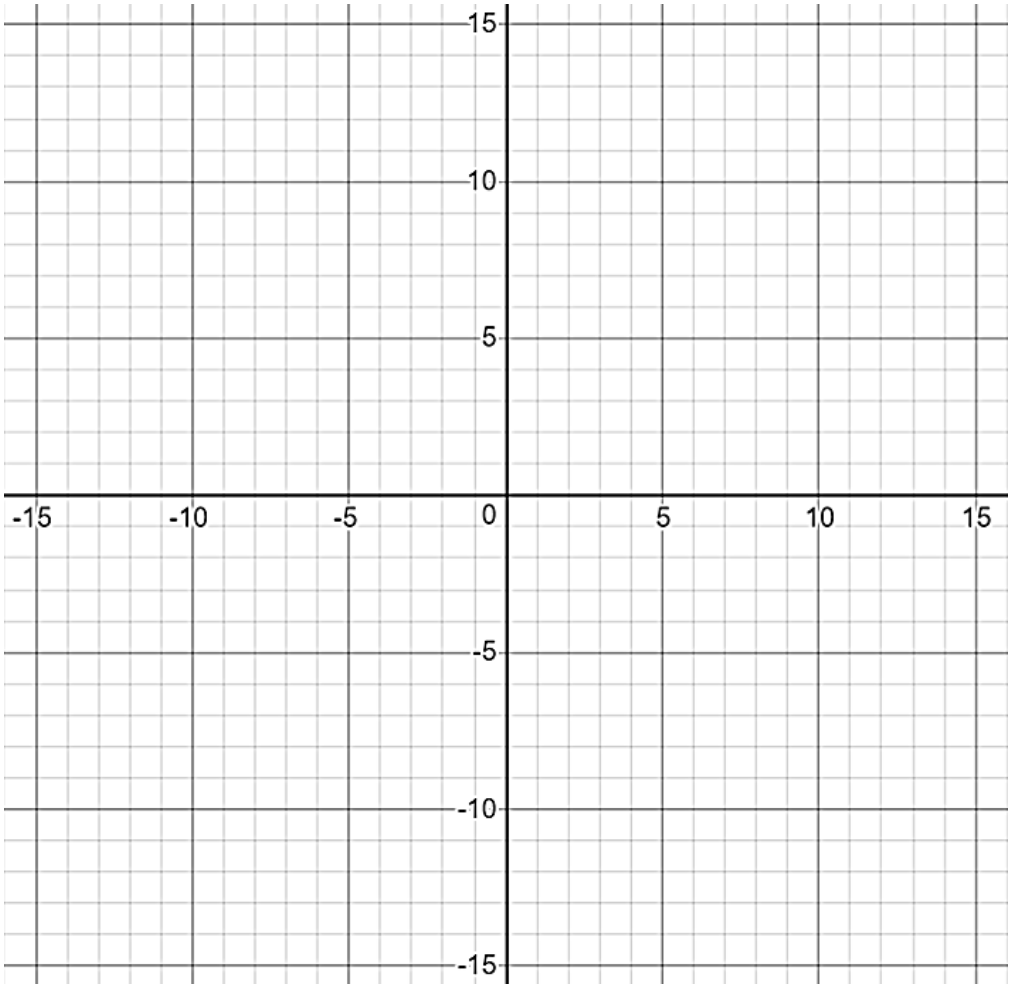
1) $f(x)=x^2+10x-12$ 2) $g(x)=-2(x+3)(x-5)$ 3) $h(x)=-(x+6)^2+15$

Opens:_____ Opens:_____ Opens:_____

y-int_____ *y*-int_____ *y*-int_____

Vertex:_____ Vertex:_____ Vertex:_____

Graph and label all three functions on the same grid below.



Find first and second differences to describe the function:

Type of function?_____

x	y	First Differences	Second Differences
−3	3		
−2	4		
−1	5		
0	6		
1	7		

Type of function?_____

x	y	First Differences	Second Differences
−2	12		
−1	3		
0	0		
1	3		
2	12		

Describe the transformation(s) necessary to translate the graph of the function $f(x)=x^2$ into the graph of each function *g(x), h(x)*, and *p(x)*. ***Graph*** and label each function using those transformations, on the grid below.

$g(x)=(x-2)^2+8$ $h(x)=x^2-7$ $p(x)=-(x+3)^2+6$