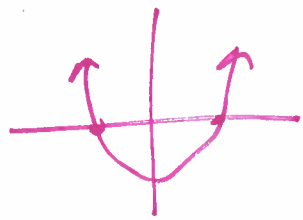
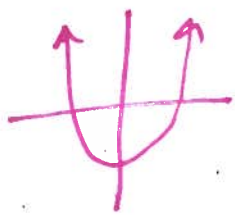
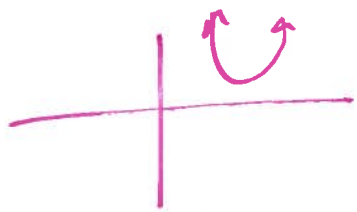
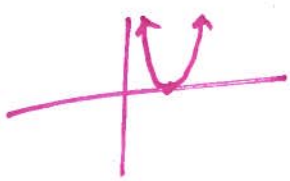
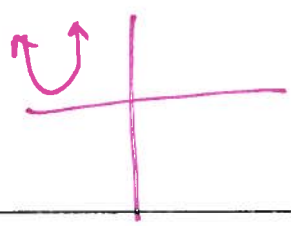
Quadratic Formula and the Discriminant

Name: Key

Date:

Determine the discriminant and sketch a graph that may represent the function.

b^2-4ac

	Function	Discriminant	Type of Solutions How many? Real? Complex? Both?	Sketch Graph answer may vary
1	$x^2-2x-5=6$ $x^2-2x-11=0$	$4-4(1)(-11)$ $4+44=48$ ~~204~~	2 $\mathbb{R}$	
2	$2x^2=7x-3$ $2x^2-7x+3=0$	$49-4(2)(3)$ $49-24$ 25	2 $\mathbb{R}$	
3	$x^2+5=4x$ $x^2-4x+5=0$	$16-4(1)(5)$ $16-20$ -4	2 $\mathbb{C}$	
4	$x^2-2x+1=0$	$4-4(1)(1)$ 0	1 $\mathbb{R}$ Double Root	
5	$x^2+4x+4=0$	$16-4(1)(4)$ $16-16$ 0	1 $\mathbb{R}$ Double Root	
6	$2x^2+4x=-15$ $2x^2+4x+15=0$	$16-4(2)(15)$ $16-120$ -104	2 $\mathbb{C}$	

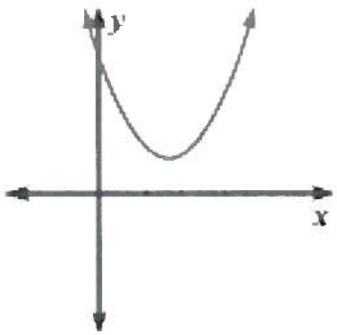
Give the letter of the graph that matches the value of the discriminant.

7. $b^2 - 4ac = 2$ B

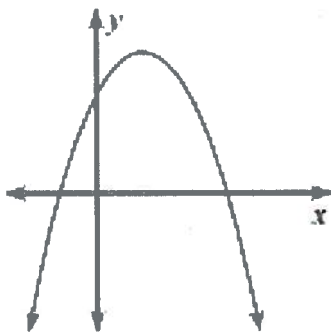
8. $b^2 - 4ac = 0$ C

9. $b^2 - 4ac = -3$ A

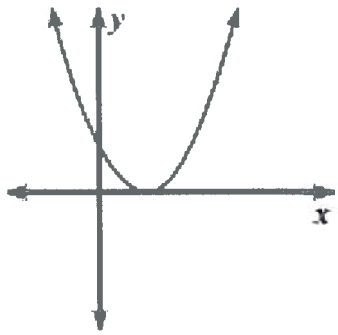
A.



B.



C.



10. In your own words, describe (what does the graph look like, what type of roots, etc.) a quadratic function with a discriminant of zero.

answers may vary

11. In your own words, describe a quadratic function with a positive discriminant.

answers may vary

12. In your own words, describe a quadratic function with a negative discriminant.

answers may vary