

Quiz
Graph. show all of your work. Do only ONE

① $f(x) = x^2 - 6x + 8$ ② $f(x) = 2x^2 + 4x + 1$

1) $a=1$ $b=-6$ $c=8$
2) $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{6 \pm \sqrt{36 - 32}}{2} = 3$

x	$x^2 - 6x + 8$	y	(x,y)
1	$1^2 - 6(1) + 8$	3	(1,3)
2	$2^2 - 6(2) + 8$	0	(2,0)
3	$3^2 - 6(3) + 8$	-1	(3,-1)
4		0	
5		3	

↳ Domain: All real #s ↳ Range: $y \geq -1$

Oct 7-7:23 AM

10/7/2011
Aim: How do we solve and graph a quadratic inequality algebraically?

Hw #9
Next Friday 10/14/2011 Test #2 based on Hw #11
Hw #11-#7 due 10/18/2011 in computer folder

Do Now Solve $x^2 - 3x - 4 = 0$ algebraically for x

$$(x+1)(x-4) = 0$$

$x = -1$ $x = 4$
Roots ok x-intercepts ok Solutions

Oct 7-7:36 AM

I- Quadratic Inequalities

1) $x^2 - 3x - 4 > 0$
 $(x+1)(x-4) > 0$
 $x = -1$ $x = 4$

check $x = -3$: $(-3)^2 - 3(-3) - 4 > 0$
 $9 + 9 - 4 > 0$
 $14 > 0$ ✓

check $x = 0$: $(0)^2 - 3(0) - 4 > 0$
 $-4 > 0$ ✗

check $x = 5$: $(5)^2 - 3(5) - 4 > 0$
 $25 - 15 - 4 > 0$
 $6 > 0$ ✓

Legend:
 $<$ ○ $x > 3$
 $>$ ○ All the numbers greater than 3
 \leq ●
 \geq ●

Oct 7-7:55 AM

2) $x^2 - 2x - 15 < 0$
 $(x-5)(x+3) < 0$
 $x = 5$ $x = -3$

check $x = 0$: $0^2 - 2(0) - 15 < 0$
 $-15 < 0$ ✓

Legend:
 $<$ ○
 \leq ●
 $>$ ○
 \geq ●

Oct 7-8:01 AM

3) $x^2 + 6x + 8 \geq 0$ 4) $x^2 + 5x + 6 < 0$

5) $x(x+3) > 0$ 6) $x^2 + 5x > -6$

Oct 7-8:09 AM