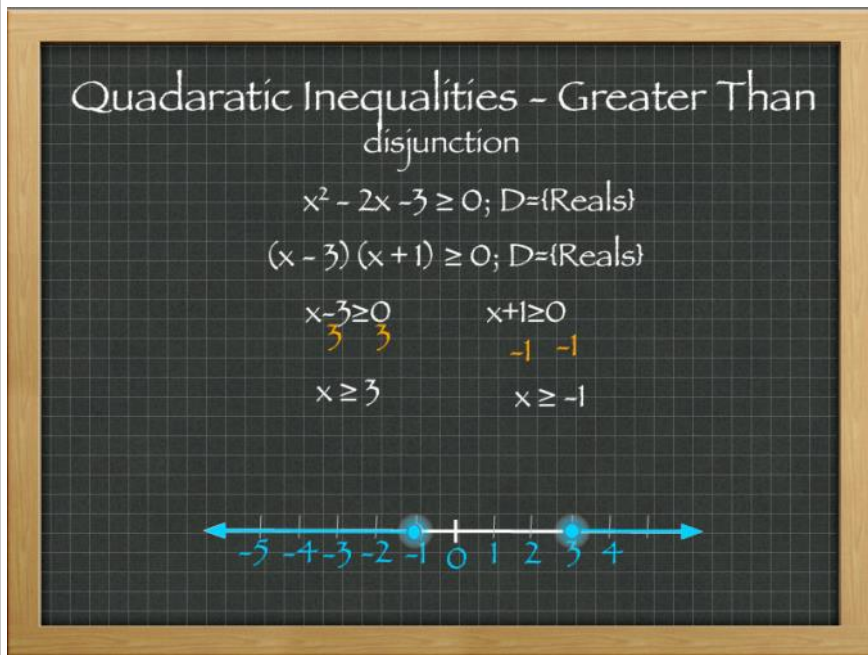
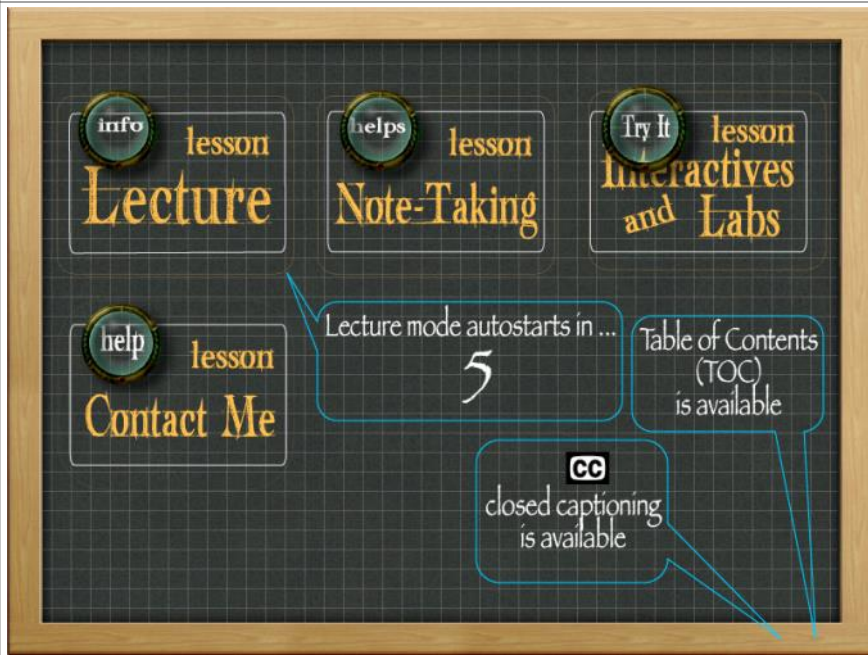


Quadratic Inequalities

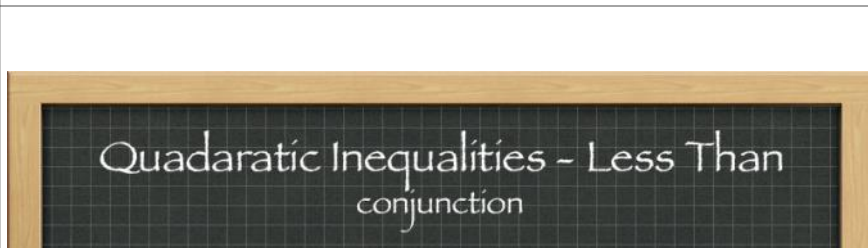
Thursday, January 19, 2012
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Slides	Notes
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Up to now, you have done linear inequalities. Now you will work on Quadratic Inequalities with one variable. These will seem very familiar though. They turn out to be the same thing as a conjunction or disjunction depending on if the sign is greater than or less than.

Let's start out with a greater than, disjunction. Solve these the same way as you normally would solve a quadratic set to zero to find the root. The odd thing you will find though is that you don't actually plot exactly what answer you come up with. You will find that they both will show greater than or greater than and equal to. Look for the area that both agree and keep the sign the same for the one that is further that direction. Here x is greater than 3 and also greater than -1. The three is included in the -1 so we will keep the 3 on the graph. Because we are to come up with a disjunction, we will reverse the direction of the other one.



For less than, we will have a conjunction. Solve as you normally would when finding the root. Now because you need a conjunction, you will have points in between the two numbers you found.

Easy!

Quadratic Inequalities - Less Than conjunction

$$(x+2)(x-3) < 0; D=\{\text{Reals}\}$$

$$\begin{array}{l} x+2 < 0 & x-3 < 0 \\ -2 & -2 & 3 & 3 \end{array}$$

$$\begin{array}{l} x < -2 & x < 3 \end{array}$$



because you need a conjunction, you will have points in between the two numbers you found.

Easy!

$$(x+2)(x-3) > 0; D=\{\text{Reals}\}$$

$$\begin{array}{l} x+2 > 0 & x-3 > 0 \\ -2 & -2 & 3 & 3 \end{array}$$

$$\begin{array}{l} x > -2 & x > 3 \end{array}$$



Try It

Congratulations!
You have completed
this topic

Give us feedback about
this lesson if you wish...

