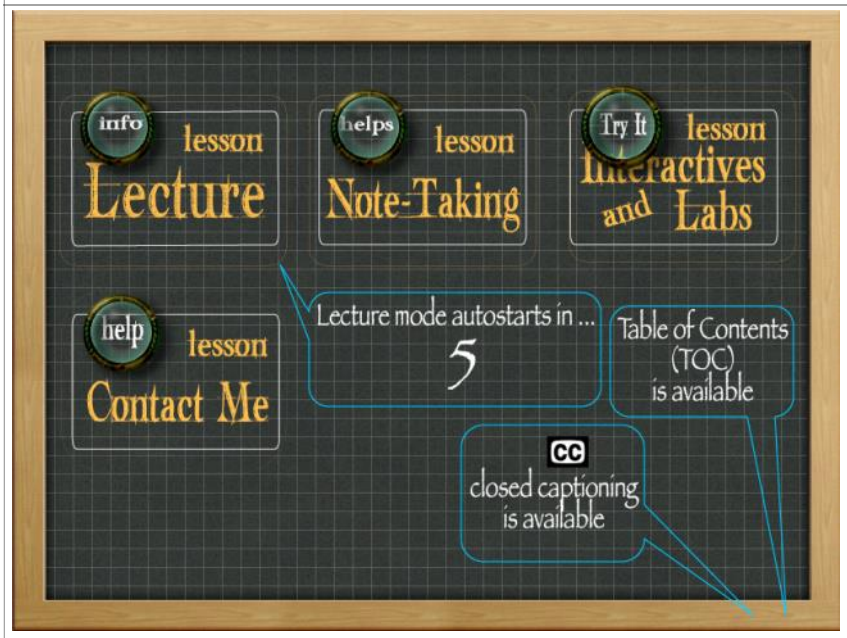
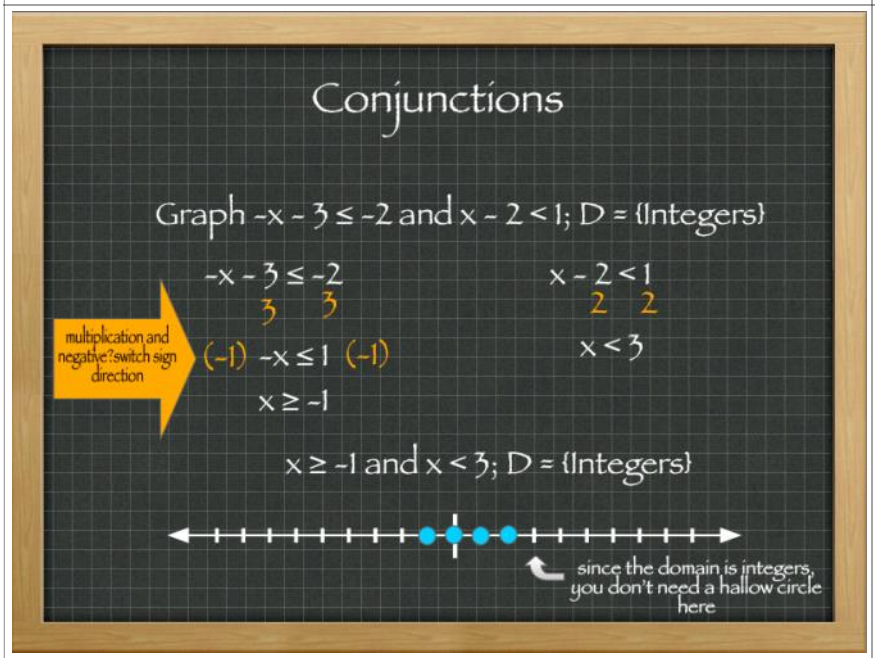
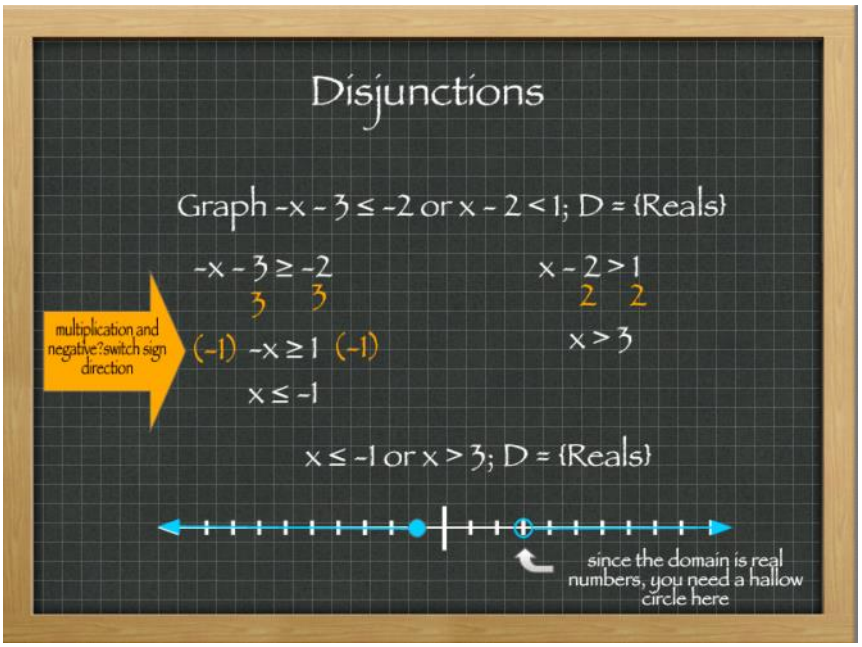
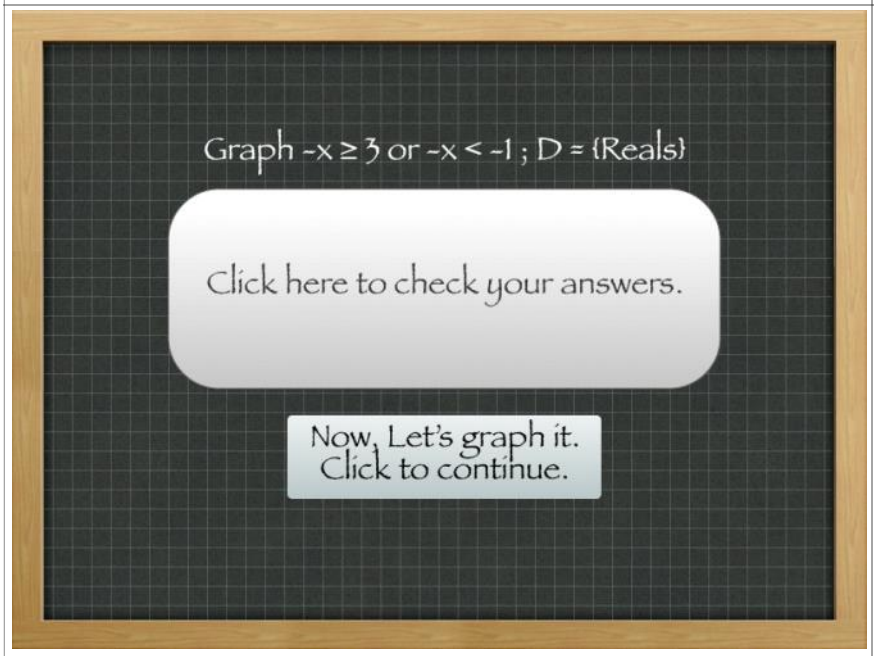
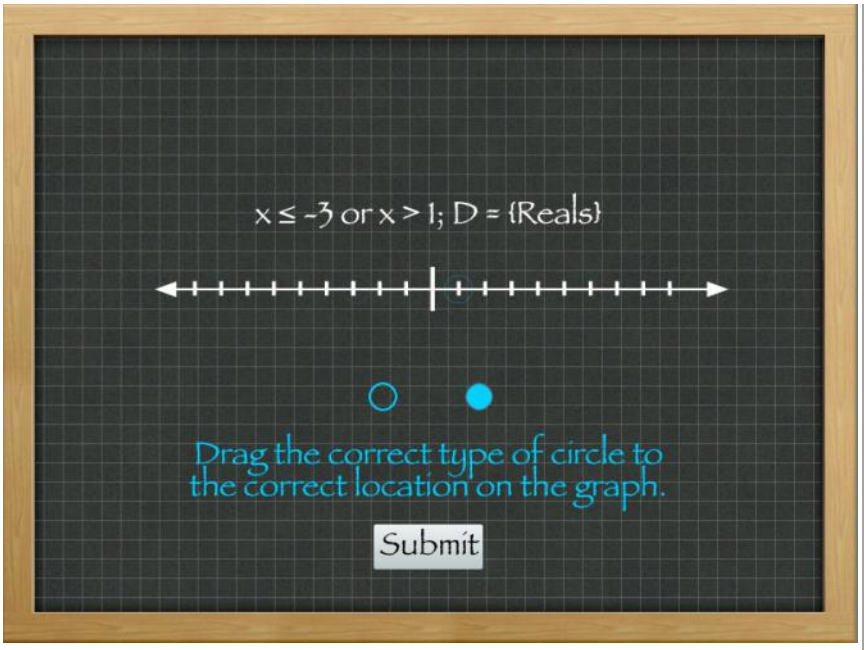
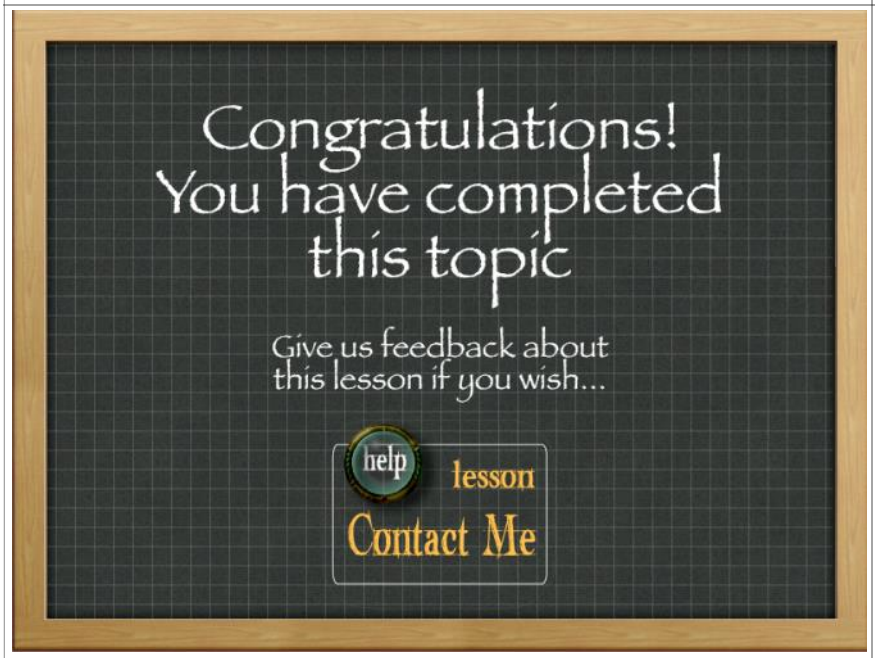
Conjunctions and Disjunctions

Thursday, January 19, 2012
5:27 PM

Slide	Notes
	
	In everyday life we have choices of this or that. On occasion we might even get the luxury of two choices: this and also that. I like that last one. Conjunctions use the word "and" like that last example, but the funny thing is that in inequalities it actually tends to limit answer choices instead of adding to it. Here is what one looks like. Notice that it is two inequalities listed together with "and". The answer for these will be the overlapping place where both are true. First, we will simplify them so that we have the x isolated on one side. In the first one we can do that by subtracting 3. We have a negative with our variable. That will not do at all. We can change It to a positive if we multiply both sides by a -1. Here is where inequalities get a bit out of the ordinary compared to equalities. If you multiply or you divide by a negative number, you flip the direction of the symbol. You don't do that when adding or subtracting, just multiplying or dividing by a negative number. We end up with x is greater than or equal to -1. We are not ready to put that on the graph though. We must work out the other inequality. We will remove the -2 with the x. That gives us x is less than 3. Now we can work on that "and" part. The part that is the solution will be the parts where they both are true. Since this one is limited to the domain of integers, we will put circles on the numbers that would be in the answers for both at the same time. When integers are being graphed, you don't require putting a hallow circle in for greater or

	less than, only when you are graphing the domain of real numbers.
	Disjunctions will use the work "or" instead of "and". This is used when the answers for the two inequalities don't actually overlap each other. You already have seen examples of the solution steps, so let's skip ahead to the graphing of these. We graph the first one. Then we graph the second one. That second one is a greater than as well as having the domain of real numbers, so we will use a hallow circle to show that it doesn't actually include the 3.
	Try It


x ≤ -3 or x > 1; D = {Reals}
Drag the correct type of circle to the correct location on the graph.
Submit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