Inequalities

Sometimes what you want to talk about is not a single number, but a segment of the number line, billions and billions of numbers and too many to list. So you fall back on mathematical phrasing and one dimensional graphs.

For example, if you want to discuss all the numbers greater than or equal to 5, you can write in a line of text [5, ∞) or you can draw a line graph:

and write it a “5” over the solid dot. If you did NOT want to include 5, you’d put a left parenthesis mark instead of the square bracket on the in-text line (5, ∞) and have a hollow dot at the end of the ray.

Reverse the direction of the ray and use −∞ for a less that. All numbers less than 3 is (−∞, 3) or



Then there is the notion of “between”. Suppose I want all numbers between 2 and 4 including them. I would write [2, 4]. And create a segment with two solid dots, one on each end.

And the rays OUTSIDE of an interval can be specified. Suppose you want all the numbers less than or equal to 5 in a union of sets with all the numbers greater than or equal to 7. This is 

Just remember: square brackets and solid dots mean included and parentheses and hollow dots mean not included!

Recall that you reverse the symbol when multiplying or dividing by a negative number…this will change your answers quite a bit sometimes!

Here are some problems to illustrate with interval notation:



Get these checked in CASA or make an appointment with me! These need to be viewed to check.