

Algebra II, Block G
September 22, 2011
Equalities and Inequalities

1. **Number Lines**

In this problem we will be representing equalities and inequalities on number lines. Represent each of the following equalities and inequalities on your number line. Identify a particular value of x that satisfies each (in)equality.

(a) $x = 3$

(b) $x > 3$

(c) $x \leq 3$

(d) $x > 4$ or $x \leq -1$

(e) $x \leq 2$ and $x \geq -2$ and $x \neq 0$

(f) $|x - 1| \leq 2$

2. **Equalities and Inequalities in Two Dimensions** When equalities and inequalities involve two variables we graph them on a coordinate plane. Of course, we can also graph inequalities that involve only one variable as well. Graph the following equalities and inequalities. Compare your graphs to your representation of these (in)equalities on a number line. Identify a point (x, y) that satisfies each (in)equality.

(a) $x = 3$

(b) $x > 3$

(c) $x > 4$ or $x \leq -1$

(d) $x \leq 2$ and $x \geq -2$ and $x \neq 0$

(e) $|x - 1| \leq 2$