

Working through an inequality problem

Things to Remember

$$(a) \quad |x| = \begin{cases} x & \text{if } x > 0 \\ -x & \text{if } x < 0. \end{cases}$$

$$(b) \quad \text{If } a < b \text{ then}$$
$$ax < bx \quad \text{if } x > 0$$
$$ax > bx \quad \text{if } x < 0.$$

This means if we don't know x , solutions will have to be broken down into multiple cases.

Examples. Find all x so that

$$\frac{5x}{x+1} < 3$$