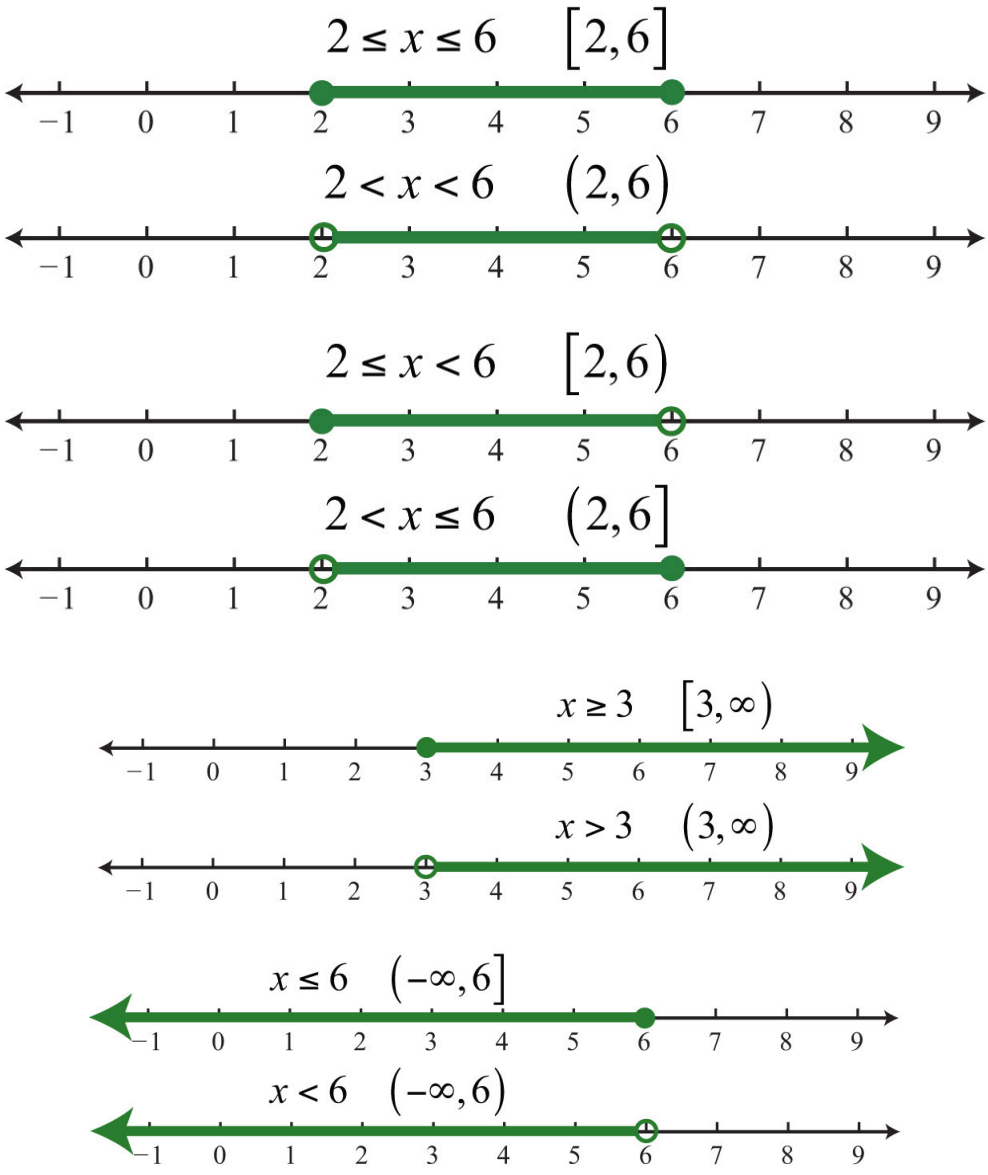
MATH 6
ASSIGNMENT 8: INTERVALS HANDOUT

Intervals



Intervals

1. Draw the following sets on the number line:

(a) Set of all numbers x satisfying $x \leq 2$ and $x \geq -5$;

(b) Set of all numbers x satisfying $x \leq 2$ or $x \geq -5$

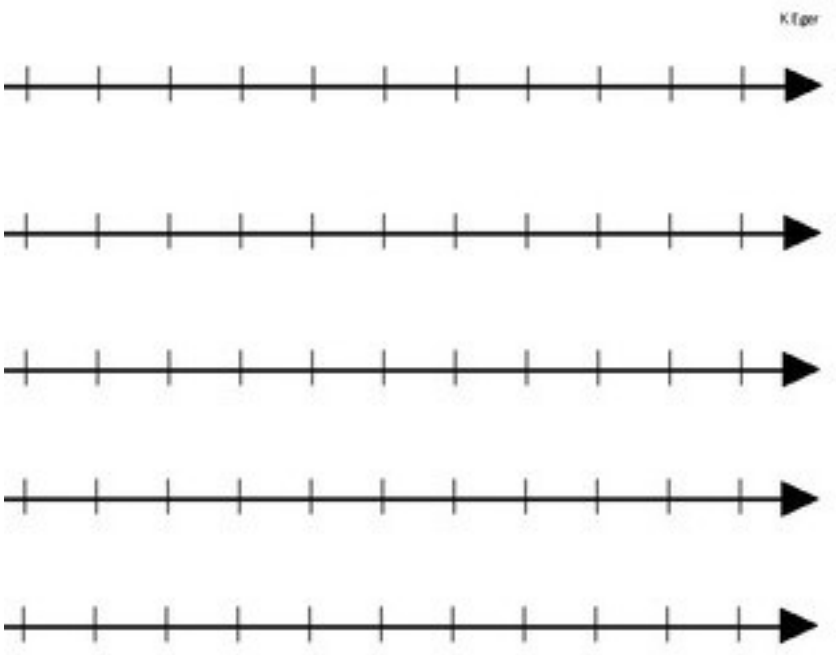
(c) Set of all numbers x satisfying $x \leq -5$ or $x \geq 2$

2. For each of the sets below, draw it on the number line and then describe its complement:

(a) $[0, 2]$ (b) $(-\infty, 1] \cup [3, \infty)$ (c) $(0, 5) \cup (2, \infty)$ where

$[a, b] = \{x \mid a \leq x \leq b\}$ is the interval from a to b (including endpoints),

$(a, b) = \{x \mid a < x < b\}$ is the interval from a to b (**not** including endpoints),

$[a, \infty) = \{x \mid a \leq x\}$ is the half-line from a to infinity (including a),

$(a, \infty) = \{x \mid a < x\}$ is the half-line from a to infinity (**not** including a)