Mathematics 1375/D572, Spring 2019 **Quiz #1**
Instructor: Suman Ganguli **Tuesday, February 5** **Name:** _____

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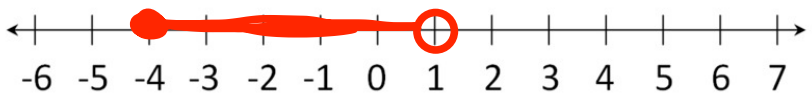
1. (6 points) For each of the following sets of real numbers specified by inequalities:

   - express the set in interval notation
   - graph the set on the given number line

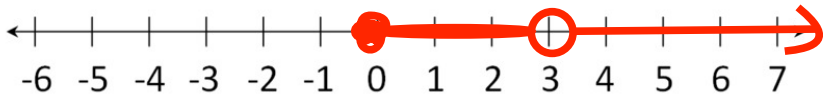
   (a) $-4 \leq x < 1$



Solution:

$[-4, 1)$

   (b) $x \geq 0$ but $x \neq 3$



Solution:

$[0, 3) \cup (3, \infty)$

2. (6 points) Solve the inequality:

$$|2x - 5| \leq 7$$

Write the solution set in interval notation.

Solution: $|2x - 5| \leq 7$ if and only if

$$-7 \leq 2x - 5 \leq 7$$

$$-2 \leq 2x \leq 12$$

$$-1 \leq x \leq 6$$

So the solution set is $[-1, 6]$