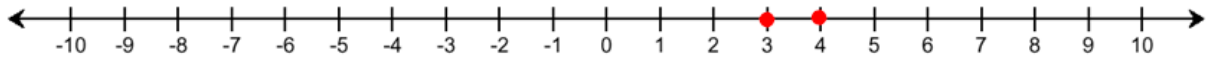


NAME: \_\_\_\_\_ Score \_\_\_\_\_/10

Please **print** your name**SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION****NO DECIMAL APPROXIMATIONS. NO MIXED NUMBERS.**

1. (1 pt.) An inequality is a mathematical statement which contains an **inequality** symbol.
2. (1 pt.) A number (or numbers) that makes an inequality **true** when substituted for the variable (or variables) is called a solution of the inequality.
3. (1 pt.) The solution set of a compound inequality formed with the word **or** is the **union** of the solution sets of the two inequalities.
4. (1 pt.) T      **F**       $5 \notin \mathbb{Q}$
5. (1 pt.) **T**      F       $5 \in \mathbb{N}$
6. (1 pt.) T      **F**       $5 \subset \mathbb{N}$
7. (1 pt.) A **linear inequality** in one variable is an inequality that can be written in the form  $ax + b < 0$  (or  $ax + b > 0$ ) where  $a$  and  $b$  are real numbers with  $a$  not zero.
8. (1 pt.) Sketch the graph of  $\{x \mid x \in \mathbb{N} \text{ and } 3 \leq x < 5\}$



9. (1 pt.) Solve the equation  $3x + 2 = \sqrt{7}x - 3$

$$\begin{aligned}
 3x + 2 &= \sqrt{7}x - 3 \\
 3x &= \sqrt{7}x - 5 \\
 3x - \sqrt{7}x &= -5 \\
 (3 - \sqrt{7})x &= -5 \\
 x &= \frac{-5}{3 - \sqrt{7}} = \frac{5}{\sqrt{7} - 3}
 \end{aligned}$$

10. (1 pt.) Solve the equation  $5x - 3 = 7 - 8x$

$$\begin{aligned}
 5x - 3 &= 7 - 8x \\
 13x - 3 &= 7 \\
 13x &= 10 \\
 x &= \frac{10}{13}
 \end{aligned}$$