Name: …… Date: ……..

Thinking with Models _ Linear Inequality

Assessment Criterion: A and C

1. Match each inequality with the correct number line.

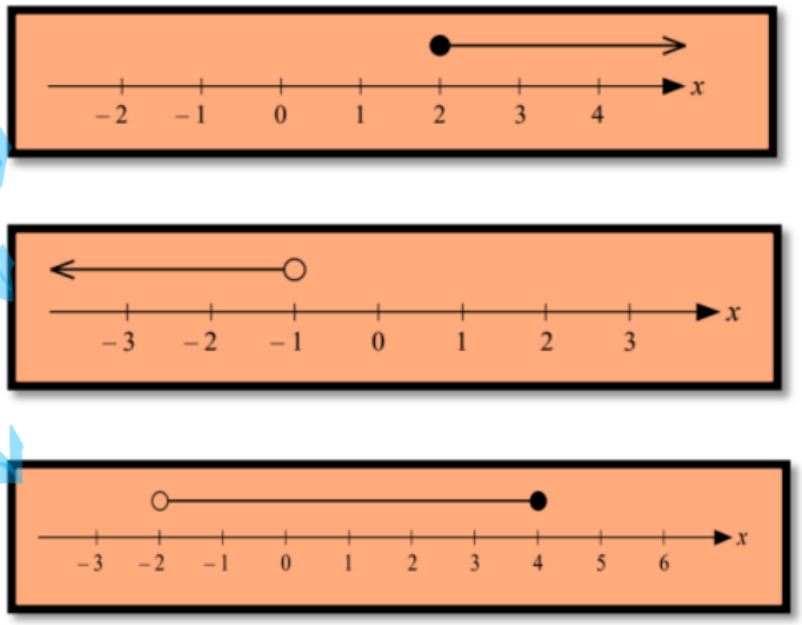
Inequalities:

$x < -1$

$-2 < x \leq 4$

$x \geq 2$

Number lines

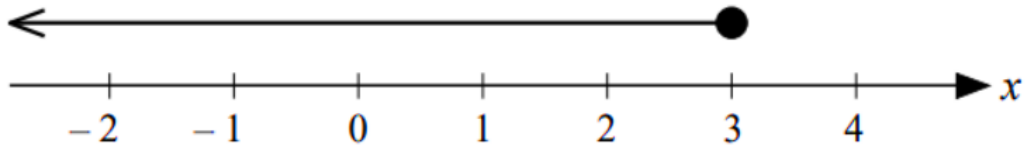


2. The inequality 5−x ≥ 2 has the solution x≤3.

✓A) True B) False

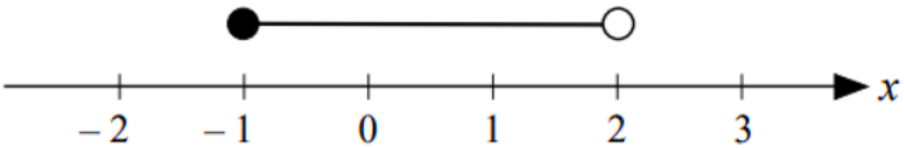
3. Write an inequality to describe the region represented on each number line below:

a)



$x \leq 3$

b)



$-1 \leq x < 2$

4. **Solve** the inequality and represent the solution on a number line:

$$3x-5<7$$

Show each step and **state** the solution set clearly.

$3x-5<7$

$3x<7+5$

$3x<12$

$x<\frac{12}{3}$

$x<4$

5. A student claims that the solution to

$$2(3x-4)>4x+8 \quad \text{is} \quad x>8.$$

Verify whether the student's claim is correct. If incorrect, **explain** the error using mathematical reasoning and the correct solution.

$6x-8>4x+8$

$6x-4x>8+8$

$2x>16$

$x>\frac{16}{2}$

$x>8$

The student's claim $x>8$ is correct

All algebraic steps and simplifications are valid.