

Mathematics Grade 8 Week 4

Inequalities

Example 1

Represent each of the following inequalities on a number line.

(a) $x \geq -2$

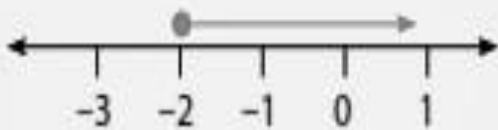
(b) $x > 1$

(c) $x \leq 4$

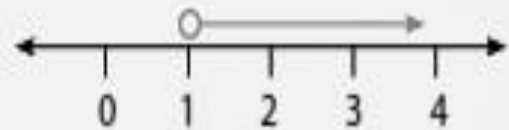
(d) $x < -1$

Solution

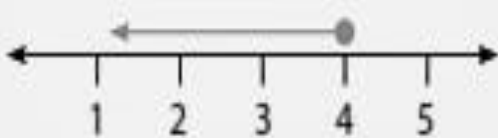
(a) $x \geq -2$



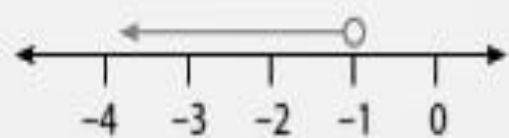
(b) $x > 1$



(c) $x \leq 4$



(d) $x < -1$



Example 2

Represent each of the following inequalities on a number line.

(a) $-2 < x < 1$

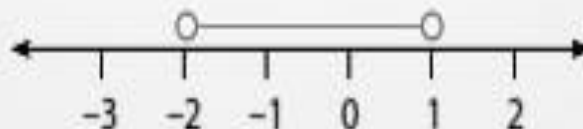
(b) $-1 \leq x < 3$

(c) $1 \leq x \leq 5$

(d) $2 < x \leq 4$

Solution

(a) $-2 < x < 1$ [here the values that x can take are found between -2 and 1 but -2 and 1 are not be included (two unshaded circles)]



(b) $-1 \leq x < 3$

[here the values that x can take are found between -1 and 3 . -1 is included (shaded circle) but 3 is not included (unshaded circle)]



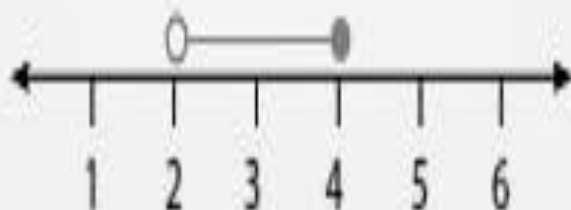
(c) $1 \leq x \leq 5$

[here the values that x can take are found between 1 and 5 and both 1 and 5 are included (two shaded circles)]



(d) $2 < x \leq 4$

[here the values that x can take are found between 2 and 4 . 4 is included (shaded circle) but 2 is not included (unshaded circle)]



1. Represent each of the following inequalities on a number line:

(a) $x > 2$

(b) $x \geq -1$

(c) $x < -2$

(d) $x > -3$

(e) $x \leq 5$

(f) $x \leq -4$

(g) $x < 3$

(h) $x \geq 3$

2. Represent each of the following on a number line:

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

(b) $-1 \leq x < 3$

(c) $0 < x \leq 4$

(d) $-2 < x < 5$

3. Write down the inequality represented on each of the following number line:

