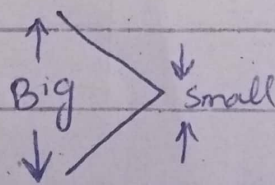


Lecture - 2

Solving Inequalities

Symbol	words	Example
$>$	greater than	$x + 3 > 2$
$<$	Less than	$7x < 28$
\geq	greater than or equal to	$5 \geq x - 1$
\leq	less than or equal to	$2y + 1 \leq 7$

How to memorize:



Example

$$x + 2 > 12$$

Sol

Subtract 2 from both sides.

$$x + 2 - 2 > 12 - 2$$

$$x > 10$$

Ans

Q2

$$3x < 7 + 3$$

$$3x < 10$$

$$\frac{3x}{3} < \frac{10}{3}$$

$$x < \frac{10}{3}$$

Ans

Q#3

Sol

$$-2y < -8$$

Divide by -2

$$\frac{-2y}{-2} < \frac{-8}{-2}$$

$$\frac{-2y}{-2} > \frac{-8}{-2}$$

$$y > 4$$

Ans

Q #4

$$\frac{(x-3)}{2} < -5$$

multiply by 2 on both sides

$$2 \times \frac{x-3}{2} < -5 \times 2$$

$$x-3 < -10$$

Add 3 on both sides

$$x-3+3 < -10+3$$

$$x < -7$$

Ans

Q #5

$$-2 < \frac{(6-2x)}{3} < 4$$

Sol

multiply by 3

$$3x - 2 < 3x \frac{(6-2x)}{3} < 4 \times 3$$

$$-6 < (6-2x) < 12$$

Subtract 6 from each side.

$$-6 - 6 < 6 - 2x - 6 < 12 - 6$$

$$-12 < -2x < 6$$

$$-12 < -2x < 6$$

Divide by -2 by each side.

$$\frac{-12}{-2} < \frac{-2x}{-2} < \frac{6}{-2}$$

$$\frac{-12}{-2} > \frac{-2x}{-2} > \frac{6}{-2}$$

$$6 > x > -3$$

Ans.