

UNIT 16 *Inequalities*

Overhead Slides

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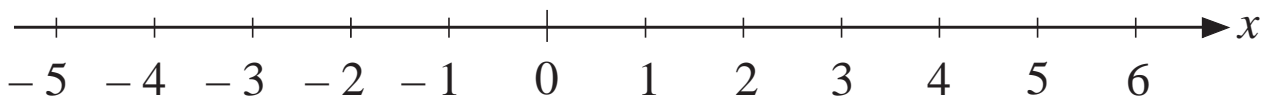
- 16.1 Inequalities on a Number Line
- 16.2 Solving Linear Inequalities
- 16.3 Inequalities Involving Quadratic Terms
- 16.4 Graphical Approach

OS 16.1

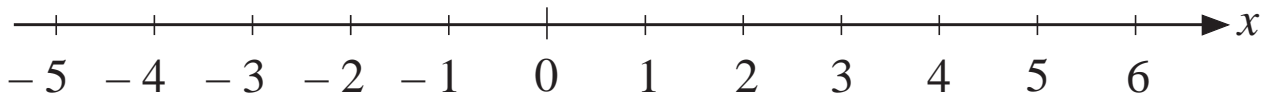
Inequalities on a Number Line

Illustrate these inequalities on the number line and list the integer values which satisfy each one.

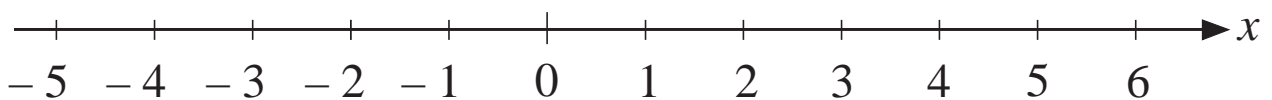
(1a) $2 \leq x < 6$ $\left\{ \right.$



(b) $-3 < x < 4$ $\left\{ \right.$



(c) $-1 \leq x \leq 3$ $\left\{ \right.$

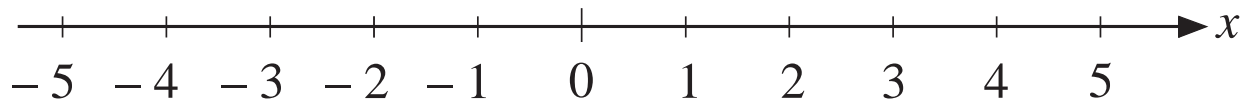


Which integer values of x satisfy all three inequalities? $\left\{ \right.$

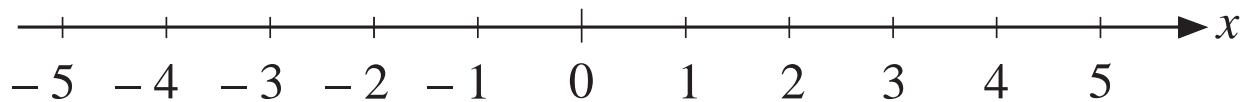
OS 16.2*Solving Linear Inequalities*

Solve the following inequalities and illustrate each one on the number line.

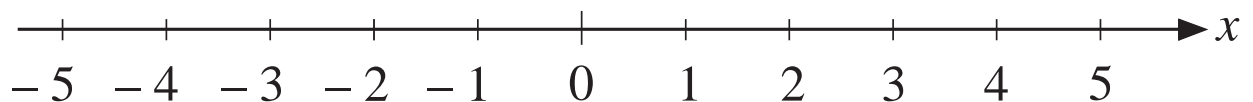
(a) $4(x - 1) < 12$



(b) $5 - 2x \geq -1$



(c) $-4 \leq 2x + 2 \leq 6$

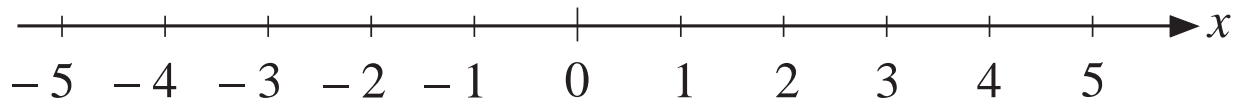


OS 16.3

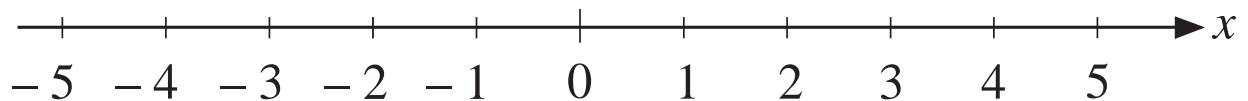
Inequalities Involving Quadratic Terms

Solve the following inequalities and illustrate each one on the number line.

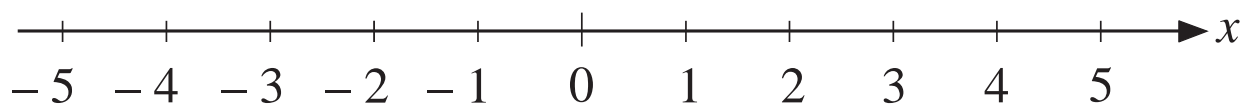
(a) $x^2 \leq 4$



(b) $x^2 - 7 \geq 2$



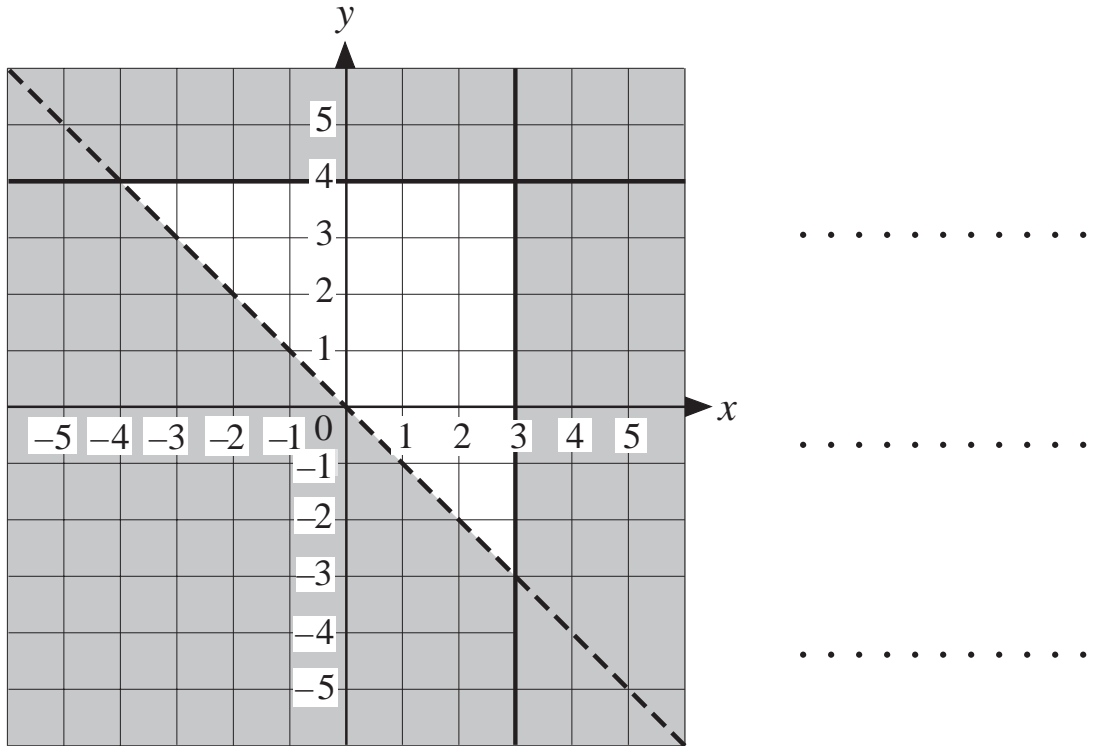
(c) $x^2 + x - 2 > 0$



OS 16.4

Graphical Approach

A In the diagram below, find the three inequalities which define the *unshaded* region.



B Find the region satisfied by the inequalities:

$$y \geq 2$$

$$y \geq -5x + 5$$

$$y \leq -x + 5$$

