

Compound and Absolute Value Inequalities

Solve each compound inequality, graph its solution, and write in interval notation.

1) $10x + 7 \geq 67$ or $2x + 3 < -13$



$x \geq 6$ or $x < -8$

$(-\infty, -8) \cup (6, \infty)$

2) $-35 \leq 6b - 5 \leq 43$



$-5 \leq b \leq 8$

$[-5, 8]$

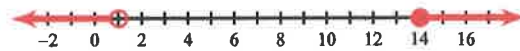
3) $3 + 9a < 3a + 3$ and $6a + 3 < 7a + 4$



$-1 < a < 0$

$(-1, 0)$

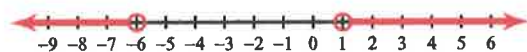
4) $5x + 9 \leq 6x - 5$ or $8x - 7 < -1 + 2x$



$x \geq 14$ or $x < 1$

$(-\infty, 1) \cup [14, \infty)$

5) $-2n - 3 < -5$ or $4n + 9 < -15$



$n > 1$ or $n < -6$

$(-\infty, -6) \cup (1, \infty)$

6) $2 < 2 - 5p \leq 37$

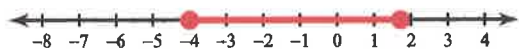


$-7 \leq p < 0$

$[-7, 0)$

Solve each inequality and graph its solution.

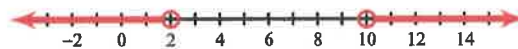
7) $|7v + 8| \leq 20$



$-4 \leq v \leq \frac{12}{7}$

$[-4, 12/7]$

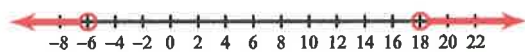
8) $|x - 6| > 4$



$x > 10$ or $x < 2$

$(-\infty, 2) \cup (10, \infty)$

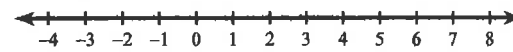
9) $1 + |x - 6| > 13$



$x > 18$ or $x < -6$

$(-\infty, -6) \cup (18, \infty)$

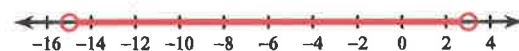
10) $9|8a + 6| \leq -18$



No solution.

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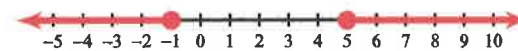
11) $8|6 + x| + 4 < 76$



$-15 < x < 3$

$(-15, 3)$

12) $-8|k - 2| + 2 \leq -22$



$k \geq 5$ or $k \leq -1$

$(-\infty, -1] \cup [5, \infty)$