

Solve these inequalities. Show at least one intermediate step for each.

1 $1 - 2x \leq 3$

First, I subtract 1 from both sides:

$$-2x \leq 2.$$

Next, I divide both sides by -2 and (since -2 is negative) switch the direction of the inequality:

$$x \geq -1.$$

Now I am done! If you like, the solution set for x is $(-\infty, -1]$.

2 $-3 \leq 6x + 1 < 10$

First, I subtract 1 from all three sides:

$$-4 \leq 6x < 9.$$

Next, I divide both sides by 6 (and, since 6 is positive, keep the original direction of the inequalities):

$$-\frac{2}{3} \leq x < \frac{3}{2}.$$

If you like, the solution set for x is $[-2/3, 3/2)$.