

Lesson 5-4: Solve Inequalities Using Addition or Subtraction

1. Sample answer: You use the inverse relationship between addition and subtraction to isolate the variable when solving both equations and inequalities. However, inequalities have many more solutions.
2. a. The solutions are $x < 3$ and $x > 3$. No solutions are the same because $x < 3$ includes values to the left of 3 while $x > 3$ included values to the right of 3. Neither inequality includes 3.
b. The solutions are $x \leq 3$ and $x \geq 3$. Yes; $x = 3$ is a solution for both Inequalities.
3. Sample answers: $x - 23 \geq 191$; $x \geq 214$.
4. a. $x > -2$
b. $x \leq -2$
c. $x < 1 \frac{1}{2}$
5. a. $43.5 + s \leq 55$
b. $s \leq 11.5$; Elanor can increase her speed by no more than 11.5 mph.
6. 5; $<$; 5
 < 2
7. $+$; 4; $+$; 4
16
8. $x \geq 4$
9. $x \leq 9$
10. No more than 10 students
11. -7.4; Sample answer: I substituted 4.85 for x and then solved the inequality for c . This gave me the value of -7.4 for c . I then checked this by substituting -7.4 for c in the inequality and solving for x .
12. $d > 12,358 - 9,695$ or $d \geq 2,663$ feet
13. a. He subtracted 5 from 11 when he should have added.
14. Sample answer: $p - 20 \geq 8$.
15. The temperature was greater than or equal to 71 °F.
16. $47 \leq x + 21$; $x \geq 26$
17. D,