

Section 3.7 – Solving Inequalities

Problem Set 3

In exercises 1-6, give the name of the property that justifies each statement.

1. If $a + 2 < c + 5$ then $a + 2 - 5 < c + 5 - 5$.
2. If $-3 > r$ then $-1 \cdot -3 < -r$.
3. If $a \leq b$ then $a - 3 \leq b - 3$.
4. If $x > -2$ then $x + 2 < 0$.
5. If $t \geq 4$ and $4 \geq x$ then $t \geq x$.
6. If $x + 5 > 2 + y$ then $-3(x + 5) < -3(2 + y)$.

Solve the following inequalities.

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|-------------------------------------|-------------------------------|---------------------------------|
| 7. $5d + 1 \leq (d - 3)$ | 8. $-3x + 2 > -2(x + 4)$ | 9. $3.1(x - 2) + 1.7 > 2.2 + x$ |
| 10. $\frac{2}{7} + x < \frac{x}{7}$ | 11. $5 + \frac{x}{5} > -x$ | 12. $-4y + 1 > 6$ |
| 13. $-6b + 2 < -2(b + 2)$ | 14. $3(n - 2) + n + 2 \geq n$ | 15. $4x + 4 > 4(2x - 5)$ |