

Section 3.7 – Solving Inequalities

Problem Set 1

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

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

Solve the following inequalities.

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|--------------------------------------|----------------------------------|----------------------------------------|
| 7. $4y + 2 > 6$ | 8. $3x + 2 < -2(2x + 1)$ | 9. $4a + 2 \leq -3(a - 4) + 4$ |
| 10. $3x + 3x + 2 > 2(x - 4)$ | 11. $-2t + 2 \geq 4t + 2(t + 2)$ | 12. $3x + 2 > -2(2x + 1)$ |
| 13. $\frac{2}{3} + 5x > \frac{1}{3}$ | 14. $-2 + \frac{2x}{5} > x - 10$ | 15. $2.6x - 1.2 \leq 1.1(x + 1) + 4.2$ |