

- Simplify each of the following compound inequalities.
 - $x > 3$ and $x > 8$
 - $x > 3$ or $x > 8$
 - $y \leq 10$ and $y \geq -2$
 - $y \leq 10$ or $y \geq -2$
- Solve for x .
 - $2x + 3y = 24$
 - $ax + by = c$
- Rationalize the denominator.
 - $\frac{6}{2 - \sqrt{7}}$
 - $\frac{5}{\sqrt{x} - 1}$
- Simplify $\frac{5x^4 - 20x^3 - 105x^2}{2x^3 - 12x^2 - 14x} \cdot \frac{2x^2 - 4x - 6}{x^3 - 9x}$
- Factor by completing the square.
 - $x^2 - 6x - 16$
 - $16x + x^2 + 68$
 - $x^2 - 14x + 48$
 - $8x + x^2 - 1008$
 - $x^2 - 6x + 9$
- The sum of ten and the opposite of a number is 34 greater than twice the number. Find this number.
- The sum of three consecutive even numbers is 120. Find these numbers.
- Children's tickets cost \$8 each and adults' tickets cost \$15 each. We bought some tickets. The number of children's tickets is five more than twice the number of adult's tickets. How many tickets did we buy if we paid a total of \$164 for the tickets?
- Find all real numbers with the following property: If we raise the number to the third power, we get four times the number.
- One number is 20 greater than twice another. Find these number if their sum is 56.
 - One number is 20 greater than twice another. Find these number if their product is 750.