Desigualdades.

[100]

Desigualdades del tipo $ax^2 + bx + c \geq 0$

Resolver las siguientes desigualdades

(1) $4x^2 + x - 10 < 3x^2 + 2$

(2) $5x + 3 > -x^2 + 4x + 15$

(3) $6x^2 + x - 7 \leq 5x^2 - 2x + 3$

(4) $5x + 6 > 2 + 10x - x^2$

(5) $6x^2 - 3x - 1 \leq 5x^2 + 3x - 10$

(6) $-10 + x^2 + 2x > -2x + 11$

(7) $7x^2 - 5x < 6x^2 - 4x + 20$

(8) $3x^2 - 9x + 5 \geq -5 - 4x^2 + 10x$

(9) $10x^2 + x + 7 < 3x^2 + 20x - 3$

(10) $-x + 8 \geq 20 + x - 2x^2$

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Respuestas

Desigualdades del tipo $ax^2 + bx + c \geq 0$

Resolver las siguientes desigualdades

(1) $4x^2 + x - 10 < 3x^2 + 2$

$$CS = (-4, 3)$$

(2) $5x + 3 > -x^2 + 4x + 15$

$$CS = (-\infty, -4) \cup (3, +\infty) = \mathbb{R} - [-4, 3]$$

(3) $6x^2 + x - 7 \leq 5x^2 - 2x + 3$

$$CS = (-5, 2]$$

(4) $5x + 6 > 2 + 10x - x^2$

$$(-\infty, 1) \cup (4, +\infty) = \mathbb{R} - [1, 4]$$

(5) $6x^2 - 3x - 1 \leq 5x^2 + 3x - 10$

$$\{3\}$$

(6) $-10 + x^2 + 2x > -2x + 11$

$$CS = (-\infty, -7) \cup (3, +\infty) = \mathbb{R} - [-7, 3]$$

(7) $7x^2 - 5x < 6x^2 - 4x + 20$

$$CS = (-4, 5)$$

(8) $3x^2 - 9x + 5 \geq -5 - 4x^2 + 10x$

$$CS = \left(-\infty, \frac{5}{7}\right] \cup [2, +\infty) = \mathbb{R} - \left(\frac{5}{7}, 2\right)$$

(9) $10x^2 + x + 7 < 3x^2 + 20x - 3$

$$CS = \left(\frac{5}{7}, 2\right)$$

(10) $-x + 8 \geq 20 + x - 2x^2$

$$(-\infty, -2] \cup [3, +\infty) = \mathbb{R} - (-2, 3)$$