



1.- Determine el conjunto solución de las siguientes ecuaciones:

(1) $3x - 1 = 0$

(2) $4x - 2 = 3$

(3) $4x + 2 = 3$

(4) $-4x - 2 = 3$

(5) $x - 2 = 7$

(6) $-4x + 2 = -3$

(7) $3x - 4 = -12x + 8$

(8) $4x - 3 = 2x - 19$

(9) $3x + 5 = x - 3$

(10) $2x - 1 = 2x + 4$

(11) $5x - 2 = 10x - 4$

(12) $\frac{x}{2} + 2 - \frac{x}{12} = \frac{x}{6} - \frac{5}{4}$

(13) $\frac{2}{3x} - \frac{5}{x} = \frac{7}{10} - \frac{3}{2x} + 1$

(14) $\frac{1}{2}(x - 1) - (x - 3) = \frac{1}{3}(x + 3) + \frac{1}{6}$

(15) $\frac{2x + 7}{3} - \frac{2(x^2 - 4)}{5x} - \frac{4x^2 - 6}{15x} = \frac{7x^2 + 6}{3x^2}$

(16) $\frac{(x + 3)^2}{(x - 3)^2} = \frac{x - 1}{x + 1} + 2 \left(\frac{7x + 1}{x^2 - 2x - 3} \right)$

(17) $\frac{3t}{3t + 4} + \frac{2}{5} = \frac{t}{3t - 4}$

(18) $\frac{32}{x^2 + 3x + 2} - 3 = \frac{x - 3}{x + 1}$

(19) $\frac{2(a + x)}{b} - \frac{3(b + x)}{a} = \frac{6(a^2 - 2b^2)}{ab}$

(20) $6x(x - 3) + (x - 1)^3 = (x + 1)^3$

(21) $\frac{x - 10}{5} = \frac{x - 4}{7}$

(22) $\frac{3x - 1}{x - 1} = \frac{3x + 1}{x - 1}$

(23) $\frac{x + 5}{6} - \frac{x + 1}{9} = \frac{x + 3}{4}$

(24) $(2x - 1)(x + 3) - x^2 = (x + 1)^2$

2.- Encuentre el conjunto solución de las siguientes ecuaciones.

(a) $(x - 3)(x - 2) = 0$

(b) $(2x - 1)(x + 4) = 0$

(c) $x(x - \frac{1}{2}) = 0$

(d) $(x - \sqrt{2})(1 - x) = 0$

(e) $(2x - 4)(3x - 2) = 0$

(f) $(\frac{3}{2}x - \frac{1}{4})(\frac{2}{3}x + 1) = 0$

(g) $(3 - 4x)(7x + 4) = 0$

(h) $(12 + 24x)(3 - 15x) = 0$

(i) $(4 + 2\sqrt{2}x)(4 - 2\sqrt{2}x) = 0$

(j) $(x - 1)(x + 4)(3x + 9) = 0$

(k) $(2x - 1)(\sqrt{2} - 4x)(\sqrt{3} - 4x) = 0$

(l) $x(4x + \sqrt{2})(x - 1)(2x + 1)(2 - x) = 0$

(m) $\frac{2x - 1}{3x + 4} = 0$

(n) $\frac{7x - 3}{x + 4} = 0$

(ñ) $\frac{1 - 2x}{x + 4} = 0$

(o) $\frac{2x + 2}{3x + 4} = 0$

(p) $\frac{2x - 1}{x - 1} = 1$

(q) $\frac{x}{3} - \frac{1}{4} = 1 - \frac{2x}{3}$

(r) $\frac{2x + 7}{3} = \frac{4x - 2}{4}$



3.- Use la igualdad $(x + a)(x + b) = x^2 + (a + b)x + ab$ para resolver las siguientes ecuaciones.

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| •- $x^2 - 2x - 3 = 0.$ | •- $x^2 - 5x - 6 = 0.$ | •- $x^2 - 5x + 6 = 0.$ |
| •- $x^2 - 9x + 18 = 0.$ | •- $x^2 - 3x - 4 = 0.$ | •- $x^2 + 12x + 32 = 0.$ |
| •- $x^2 - 4x + 3 = 0.$ | •- $x^2 + 9x + 20 = 0.$ | •- $x^2 - 4x - 5 = 0.$ |
| •- $x^2 - 7x + 10 = 0.$ | •- $x^2 + 12x + 35 = 0.$ | •- $x^2 - 7x + 12 = 0.$ |
| •- $x^2 + 3x + 2 = 0.$ | •- $x^2 + 2x - 48 = 0.$ | •- $x^2 + 9x + 20 = 0.$ |
| •- $x^2 + 5x + 6 = 0.$ | •- $x^2 + 8x + 7 = 0.$ | •- $x^2 - x - 2 = 0.$ |
| •- $x^2 - 9x + 20 = 0.$ | •- $x^2 - 12x + 36 = 0.$ | •- $x^2 + x - 30 = 0.$ |
| •- $x^2 + 9x + 8 = 0.$ | •- $x^2 - 8x + 7 = 0.$ | •- $x^2 + 2x - 8 = 0.$ |

4.- En caso de ser posible, describa el conjunto A por extensión. En caso contrario explique por qué no es posible.

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| (a) $A = \{x \in \mathbb{N} : (x - 3)(x - 2) = 0\}$ | (ñ) $A = \left\{x \in \mathbb{R} : \frac{2}{3x} - \frac{5}{x} = \frac{7}{10} - \frac{3}{2x} + 1\right\}$ |
| (b) $A = \{x \in \mathbb{Z} : (2x - 1)(x + 4) = 0\}$ | (o) $A = \left\{x \in \mathbb{R} : \frac{1}{2}(x - 1) - (x - 3) = \frac{1}{3}(x + 3) + \frac{1}{6}\right\}$ |
| (c) $A = \{x \in \mathbb{N} : x(x - \frac{1}{2}) = 0\}$ | (p) $A = \left\{x \in \mathbb{R} : \frac{(x + 3)^2}{(x - 3)^2} = \frac{x - 1}{x + 1} + 2 \left(\frac{7x + 1}{x^2 - 2x - 3}\right)\right\}$ |
| (d) $A = \{x \in \mathbb{I} : (x - \sqrt{2})(1 - x) = 0\}$ | (q) $A = \left\{x \in \mathbb{R} : \frac{3t}{3t + 4} + \frac{2}{5} = \frac{t}{3t - 4}\right\}$ |
| (e) $A = \{x \in \mathbb{R} : (2x - 4)(3x - 2) = 0\}$ | (r) $A = \left\{x \in \mathbb{R} : \frac{32}{x^2 + 3x + 2} - 3 = \frac{x - 3}{x + 1}\right\}$ |
| (f) $A = \{x \in \mathbb{Q} : (\frac{3}{2}x - \frac{1}{4})(\frac{2}{3}x + 1) = 0\}$ | (s) $A = \{x \in \mathbb{R} : 6x(x - 3) + (x - 1)^3 = (x + 1)^3\}$ |
| (g) $A = \{x \in \mathbb{Q} : (3 - 4x)(7x + 4) = 0\}$ | (t) $A = \left\{x \in \mathbb{R} : \frac{x - 10}{5} = \frac{x - 4}{7}\right\}$ |
| (h) $A = \{x \in \mathbb{Z} : (12 + 24x)(3 - 15x) = 0\}$ | (u) $A = \left\{x \in \mathbb{R} : \frac{3x - 1}{x - 1} = \frac{3x + 1}{x - 1}\right\}$ |
| (i) $A = \{x \in \mathbb{R} : (4 + 2\sqrt{2}x)(4 - 2\sqrt{2}x) = 0\}$ | (v) $A = \left\{x \in \mathbb{R} : \frac{x + 5}{6} - \frac{x + 1}{9} = \frac{x + 3}{4}\right\}$ |
| (j) $A = \{x \in \mathbb{I} : (2x - 1)(\sqrt{2} - 4x)(\sqrt{3} - 4x) = 0\}$ | (w) $A = \{x \in \mathbb{R} : (2x - 1)(x + 3) - x^2 = (x + 1)^2\}$ |
| (k) $A = \{x \in \mathbb{N} : 3x + 5 = x - 3\}$ | |
| (l) $A = \{x \in \mathbb{R} : 2x - 1 = 2x + 4\}$ | |
| (m) $A = \{x \in \mathbb{Z} : 5x - 2 = 10x - 4\}$ | |
| (n) $A = \left\{x \in \mathbb{R} : \frac{x}{2} + 2 - \frac{x}{12} = \frac{x}{6} - \frac{5}{4}\right\}$ | |