Curso Mentor

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Tema: Equações Literais I
Data: 30 de março de 2014

Q1. Resolva cada uma das equações a seguir, na incógnita x, escrevendo o conjunto universo e o conjunto solução.

1. $7ax + 3b = -2ax + 5b$
2. $5 + 3ax = 9x + 10$
3. $\dfrac{x+a}{x-a} + \dfrac{x+b}{x-b} = \dfrac{a-b}{(x-a)(x-b)}$
4. $x + 2a = \dfrac{b}{2}$
5. $\dfrac{x}{a} + 2 = 3 - \dfrac{x}{a}$
6. $x - m = m - x$
7. $\dfrac{x+a}{a} = \dfrac{x-b}{b}$
8. $4(x-a) = a$
9. $\dfrac{x-a}{b^2} + \dfrac{x-b}{a^2} = b$
10. $\dfrac{x-1}{1+a} + \dfrac{x+1}{3+a} = 2$
11. $\dfrac{a}{b} + \dfrac{b}{a} - \left(\dfrac{a^2}{bx} + \dfrac{b^2}{ax}\right) = 1$
12. $\dfrac{x^2}{m+x} + \dfrac{np^2}{m^2+mx} = x$
13. $\dfrac{x+c}{3} + \dfrac{3(x-2c)}{4} = c$
14. $\dfrac{m}{m+x} = \dfrac{n}{n-x}$
15. $1 + \dfrac{x}{a} = 1 - \dfrac{x}{b}$
16. $\dfrac{1}{a} + \dfrac{a}{a+x} = \dfrac{a+x}{ax}$
17. $\dfrac{x+a}{x-a} + \dfrac{x+b}{x-b} = 2$
18. $\dfrac{b-x}{a+x} - \dfrac{c-x}{x-a} = \dfrac{a(2x-c)}{x^2-a^2}$
19. $\dfrac{a-bx}{bc} + \dfrac{b-cx}{ac} + \dfrac{c-ax}{ab} = 0$
20. $\dfrac{x}{5} + \dfrac{x}{4} = m + 2$
21. $\dfrac{m-2x^2}{m^2-mx} - \dfrac{mx}{x-m} = \dfrac{2x}{m}$
22. $\dfrac{1}{ax-bx} - \dfrac{1}{ax+bx} = \dfrac{b^2}{a^2-b^2}$
23. $\dfrac{x}{a} - \dfrac{x}{b} = a - b$
24. $ax + 5 = 3x - 1$
25. $\dfrac{ax-ab}{a^2} = \dfrac{a^2-b^2}{(a+b)^2}$

GABARITO

Q1.

1. $U = \mathbb{R}$, $V = \{\frac{2b}{9a}\}, a \neq 0$
2. $U = \mathbb{R}$, $V = \{\frac{5}{3(a-3)}\}, a \neq 3$
3. $U = \mathbb{R} - \{a, b\}$, $V = \{\frac{1}{2}\}, a \neq b$
4. $U = \mathbb{R}$, $V = \{\frac{b-4a}{2}\}$
5. $U = \mathbb{R}$, $V = \{\frac{a}{2}\}, a \neq 0$
6. $U = \mathbb{R}$, $V = \{m\}$
7. $U = \mathbb{R}$, $V = \{\frac{2ab}{a-b}\}, a \neq 0, b \neq 0, a \neq b$
8. $U = \mathbb{R}$, $V = \{\frac{5a}{4}\}$
9. $U = \mathbb{R}$, $V = \{\frac{a^3+b^3+a^2b^3}{a^2+b^2}\}, a \neq 0, b \neq 0$
10. $U = \mathbb{R}$, $V = \{a + 2\}, a \neq -1, a \neq -3$
11. $U = \mathbb{R}^*$, $V = \{a + b\}, a \neq 0, b \neq 0$
12. $U = \mathbb{R} - \{-m\}$, $V = \{\frac{np^2}{m^2}\}, m \neq 0$
13. $U = \mathbb{R}$, $V = \{2c\}$
14. $U = \mathbb{R} - \{-m, n\}$, $V = \{0\}$
15. $U = \mathbb{R}$, $V = \{0\}, a \neq 0, b \neq 0$
16. $U = \mathbb{R} - \{0, -a\}$, $V = \{\frac{a}{a-1}\}, a \neq 1$
17. $U = \mathbb{R} - \{a, b\}$, $V = \{\frac{2ab}{a+b}\}, a \neq -b$
18. $U = \mathbb{R} - \{-a, a\}$, $V = \{\frac{ab}{ab-c}\}, ab \neq c$
19. $U = \mathbb{R}$, $V = \{\frac{a^2+b^2+c^2}{ab+ac+bc}\}, bc \neq 0, ac \neq 0, ab \neq 0, ab + ac + bc \neq 0$
20. $U = \mathbb{R}$, $V = \{\frac{20(m+2)}{9}\}$
21. $U = \mathbb{R} - \{m\}$, $V = \{\frac{1}{2-m}\}, m \neq 0, m \neq 2$
22. $U = \mathbb{R}^*$, $V = \{\frac{2}{b}\}, a \neq \pm b, b \neq 0$
23. $U = \mathbb{R}$, $V = \{-ab\}, a \neq b, a \neq 0, b \neq 0$
24. $U = \mathbb{R}$, $V = \{\frac{-6}{a-3}\}, a \neq 3$
25. $U = \mathbb{R}$, $V = \{\frac{a^2b^2}{a+b}\}, a \neq 0, a \neq -b$