

HW06: Equations and Solutions

Define the vocabulary terms.

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| 1) Equation | 2) Solution |
| 3) Can an equation be false and still be an equation? | 4) Write three examples of a false equation, three examples of a true equation, and three examples of an equation that is neither true nor false. |

Determine if the given value is a solution to the equation. Prove your response by showing the substitution and simplification.

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| 5) Equation: $5x - 6 = 0$; Value: $x = -2$ | 6) Equation: $5x - 6 = 0$; Value: $x = \frac{6}{5}$ |
| 7) Equation: $3x^2 + 4x - 1 = 2x$; Value: $x = 0$ | 8) Equation: $3x^2 + 4x - 1 = 2x$; Value: $x = \frac{1}{3}$ |
| 9) Equation: $3x^2 + 4x - 1 = 2x$; Value: $x = \sqrt{3}$ | 10) Equation: $3x^2 + 4x - 1 = 2x$; Value: $x = -1$ |
| 11) Equation: $x\sqrt{3} - 5\sqrt{3} = 4\sqrt{6} - 5\sqrt{3}$;
Value: $x = \sqrt{2}$ | 12) Equation: $x\sqrt{3} - 5\sqrt{3} = 4\sqrt{6} - 5\sqrt{3}$;
Value: $x = 4\sqrt{6}$ |

Solve each equation. Be sure to simplify and rationalize your answers as needed.

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| 13) $\frac{24}{23} = \frac{x}{23}$ | 14) $15b = -135$ |
| 15) $29x = -203$ | 16) $b + 22 = 0$ |
| 17) $n + 20 = 17$ | 18) $14x = 154$ |
| 19) $-15x = 165$ | 20) $x - (-28) = 62$ |
| 21) $-24 = \frac{r}{25}$ | 22) $2x = 6\sqrt{17}$ |
| 23) $m - \frac{5}{6} = \frac{4}{6}$ | 24) $x - \sqrt{10} = 2\sqrt{10}$ |
| 25) $y\sqrt{5} = 3\sqrt{7}$ | 26) $r - -\frac{1}{2} = \frac{3}{2}$ |
| 27) $x + \frac{2}{3} = \frac{14}{5}$ | 28) $x + \sqrt{12} = 2\sqrt{3}$ |