Section 1.6 Guided Notebook

Section 1.6 Other Types of Equations

- ☐ Work through Section 1.6 TTK #1
- ☐ Work through Section 1.6 TTK #2
- ☐ Work through Objective 1
- ☐ Work through Objective 2
- ☐ Work through Objective 3

Section 1.6 Other Types of Equations

1.6 Things To Know

1. Factoring Trinomials with a Leading Coefficient Equal to 1 (Section R.5)
    It is essential that you can factor trinomials….can you?   Try to factor the
    three trinomials below. (Watch the video to see how to factor each of these trinomials.)

    $x^2 - 2x - 24$ $\qquad\qquad$ $x^2 + 4x - 21$ $\qquad\qquad$ $x^2 - 12x + 32$

2. Factoring Trinomials with a Leading Coefficient Not Equal to 1 (Section R.5)
   It is essential that you can factor trinomials….can you? Try to factor the two
   trinomials below. (Watch the video to see how to factor each of these trinomials.)

$6x^2 - 7x - 3$ $12x^2 - 25x + 12$

Section 1.6 Objective 1 Solving Higher-Order Polynomial Equations
Work through Example 1 and take notes here. Watch the video to check your solutions.
Find all solutions of the equation $3x^3 - 2x = -5x^2$.

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Work through Example 2 and take notes here. Watch the video to check your solutions.
Find all solutions of the equation $2x^3 - x^2 + 8x - 4 = 0$.

Section 1.6 Objective 2 Solving Equations That are Quadratic In Form (Disguised Quadratics)

What does it mean for an equation to be "quadratic in form?"

Work through the interactive video that accompanies Example 3 and solve each equation:

Example 3a: $2x^4 - 11x^2 + 12 = 0$

Example 3b: $\left(\dfrac{1}{x-2}\right)^2 + \dfrac{2}{x-2} - 15 = 0$

Example 3c: $x^{2/3} - 9x^{1/3} + 8 = 0$ (Hint: $\left(x^a\right)^b = x^{ab}$)

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Example 3d: $3x^{-2} - 5x^{-1} - 2 = 0$

Section 1.6 Objective 3 Solving Equations Involving Radicals
Work through Example 4 taking notes here. Watch the video to check your work.

Solve $\sqrt{x-1} - 2 = x - 9$.

As indicated in the video, make sure that you ALWAYS isolate the radical prior to squaring both sides of an equation that involves a square root.

What is an **extraneous solution**?

Why is it important to check your solutions when solving equations involving radicals?

Work through the video that accompanies Example 5 taking notes here:

Solve $\sqrt{2x+3} + \sqrt{x-2} = 4$.

Work through the video that accompanies Example 6 taking notes here:

Solve $\sqrt[3]{1-4x} + 3 = 0$.