

# EXTRA PRACTICE — Exercises

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## Unit VIII – Quadratic Equations

### Part B – Equations That Are Quadratic in Form

#### Lesson 1 – Higher Integer Order

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Solve each of the following equations by using a temporary substitution to “reduce” it to a quadratic equation in standard form.

1.  $x^4 - 13x^2 + 36 = 0$

2.  $4x^4 + 35x^2 - 9 = 0$

3.  $-x^4 = 49 - 50x^2$

4.  $a^4 = 29a^2 - 100$

5.  $9y^4 - 37y^2 + 4 = 0$

6.  $x^6 - 28x^3 + 27 = 0$

7.  $x^6 + 7x^3 - 8 = 0$

8.  $a^3 - 26a^{\frac{3}{2}} - 27 = 0$

# EXTRA PRACTICE — Answer Key

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Solve each of the following equations by using a temporary substitution to “reduce” it to a quadratic equation in standard form.

1.  $S = \{3, -3, 2, -2\}$

2.  $S = \left\{\frac{1}{2}, -\frac{1}{2}, 3i, -3i\right\}$

3.  $S = \{7, -7, 1, -1\}$

4.  $S = \{2, -2, 5, -5\}$

5.  $S = \left\{\frac{1}{3}, -\frac{1}{3}, 2, -2\right\}$

6.  $S = \left\{3, 1, \frac{-3 + 3i\sqrt{3}}{2}, \frac{-3 - 3i\sqrt{3}}{2}, \frac{-1 + 2i}{2}, \frac{-1 - 2i}{2}\right\}$

7.  $S = \left\{1, -2, \frac{-1 + i\sqrt{3}}{2}, \frac{-1 + i\sqrt{3}}{2}, 1 + i\sqrt{3}, 1 - i\sqrt{3}\right\}$

8.  $S = \{9\}$