1.12 HW

Solve the equation.

7. $x^4 - 5x^2 + 4 = 0$

8. $x^4 - 16 = 0$

9. $6x^4 + 7x^2 - 3 = 0$

10. $x^4 - 6x^2 + 9 = 0$

11. $2x^4 + 9x^2 = 5$

12. $x^4 - 13x^2 = -36$

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ANSWER KEY

Solve the equation.

7. $x^4 - 5x^2 + 4 = 0$

$(x^2 - 1)(x^2 - 4) = 0$

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

$\boldsymbol{x = -1, 2, -2, 2}$

8. $x^4 - 16 = 0$

$(x^2 + 4)(x^2 - 4) = 0$

$(x^2 + 4)(x + 2)(x - 2) = 0$

$\boldsymbol{x = \pm 2i, -2, 2}$

9. $6x^4 + 7x^2 - 3 = 0$

$(3x^2 - 1)(2x^2 + 3) = 0$

$\boldsymbol{x = \pm\frac{1}{\sqrt{3}}, \pm\sqrt{\frac{3}{2}}i}$

10. $x^4 - 6x^2 + 9 = 0$

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

$\boldsymbol{x = \pm\sqrt{3}}$

11. $2x^4 + 9x^2 = 5$

$2x^4 + 9x^2 - 5 = 0$

$(2x^2 - 1)(x^2 + 5) = 0$

$\boldsymbol{x = \pm\frac{1}{\sqrt{2}}, \pm\sqrt{5}i}$

12. $x^4 - 13x^2 = -36$

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

$(x^2 - 4)(x^2 - 9) = 0$

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

$\boldsymbol{x = -2, 2, -3, 3}$

ANSWER KEY

Solve the equation.

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$(x^2 - 1)(x^2 - 4) = 0$

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$\boldsymbol{x = -1, 2, -2, 2}$

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$2x^4 + 9x^2 - 5 = 0$

$(2x^2 - 1)(x^2 + 5) = 0$

$\boldsymbol{x = \pm\frac{1}{\sqrt{2}}, \pm\sqrt{5}i}$

12. $x^4 - 13x^2 = -36$

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

$(x^2 - 4)(x^2 - 9) = 0$

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

$\boldsymbol{x = -2, 2, -3, 3}$