

LESSON 80

1. $f(x) = (x + 1)(x + 3)(x - 3)$ Factored form
 $f(x) = x^3 + x^2 - 9x - 9$ Standard form
2. $f(x) = x(x + 1)(x - 2)(x - 3)$ Factored form
 $f(x) = x^4 - 4x^3 + x^2 + 6x$ Standard form
3. $f(x) = x^3(x + 2)$ Factored form
 $f(x) = x^4 + 2x^3$ Standard form
4. $f(x) = (x - 4)(x - 1)^2$ Factored form
 $f(x) = x^3 - 6x^2 + 9x - 4$ Standard form
5. $f(x) = a(x + 1)(x - 2)$ Plug in the zeros.
 $-4 = a(0 + 1)(0 - 2)$ Plug in $(0, -4)$.
 $-4 = -2a; a = 2$ Solve for a .
 $f(x) = 2(x + 1)(x - 2)$ Plug in a .
 $f(x) = 2x^2 - 2x - 4$
6. $f(x) = a(x + 2)(x - 1)(x - 3)$ Plug in the zeros.
 $12 = a(2 + 2)(2 - 1)(2 - 3)$ Plug in $(2, 12)$.
 $12 = -4a; a = -3$ Solve for a .
 $f(x) = -3(x + 2)(x - 1)(x - 3)$ Factored form
 $f(x) = -3x^3 + 6x^2 + 15x - 18$ Standard form
7. $f(x) = ax(x - 3)(x + 1)^2$ Plug in the zeros.
 $10 = a(-2)(-2 - 3)(-2 + 1)^2$ Plug in $(-2, 10)$.
 $10 = 10a; a = 1$ Solve for a .
 $f(x) = x(x - 3)(x + 1)^2$ Factored form
 $f(x) = x^4 - x^3 - 5x^2 - 3x$ Standard form
8. $f(x) = ax^3(x + 2)(x - 2)$ Plug in the zeros.
 $-9 = a(1^3)(1 + 2)(1 - 2)$ Plug in $(1, -9)$.
 $-9 = -3a; a = 3$ Solve for a .
 $f(x) = 3x^3(x + 2)(x - 2)$ Factored form
 $f(x) = 3x^5 - 12x^3$ Standard form