

P.3: Roots, Radicals, & Rational Exponents

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EX:

$$\sqrt{49} = 7$$

$$x = \sqrt{25}$$

$$x = 5$$

$$x^2 = 25$$

$$x = 5, -5$$

NOTE: \sqrt{x} is the principal
(or positive) square root.

EX:

$$\sqrt[3]{8} = 2$$

the cube root of 8

$$\sqrt[3]{-27} = -3$$

$$\sqrt{-9} = 3i$$

$$9^{1/2} = \sqrt{9}$$

$$\hookrightarrow (3^2)^{1/2} = 3$$

$$\sqrt{16x^2y^3w^7z^{12}} = 4xyw^3z^6\sqrt{yw}$$

$$\sqrt[5]{2^5x^2y^7z^{26}w^{34}} = yz^5w^4\sqrt[5]{2^5x^2y^2z^6w^6}$$

$$\frac{(x^{4/3}y^{1/4})^{3/4}}{xy^{1/2}} =$$

$$\frac{x^4y^{3/4}}{xy^{1/2}} = x^3y^{1/4}$$

P.4: Polynomials

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$$(3x^2 + 2x - 7) + (6x^2 - 7x + 5)$$

$$9x^2 - 5x - 2$$

$$(3x^2 + 2x - 7) - (6x^2 - 7x + 5)$$

$$\begin{array}{r} \underbrace{3x^2 + 2x - 7} \quad \quad \quad \underbrace{-6x^2 + 7x - 5} \\ \hline \end{array}$$

$$-3x^2 + 9x - 12$$

$$(3x^2 + 2x - 7) \quad (6x^2 - 7x + 1)$$

$$18x^4 - 21x^3 + 15x^2$$

$$12x^3 - 14x^2 + 10x$$

$$- 42x^2 + 49x - 35$$

$$18x^4 - 9x^3 - 41x^2 + 59x - 35$$

P.5: Factoring

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$$x^2 + 5x + 6 = (x + 2)(x + 3)$$

$$x^2 - 10x + 24 = (x - 6)(x - 4)$$

$$x^2 + 12x - 3 \quad \text{doesn't factor}$$

$$\frac{3}{3, 1}$$

P.6: Rational Expressions

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P.8: Solving Basic Equations

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Chapter One: Functions, Graphs, & Applications