Algebra II/Pre−Calculus *Honors*

Assignment P.3

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Problems: 7, 13, 17, 35, 49, 63

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7.)

$$\text{Polynomial: } 14x - \tfrac{1}{2}x^5$$

a.) Polynomial standard form:

$$-\tfrac{1}{2}x^5 + 14x$$

b.) Polynomial degree & leading coefficient

$$5,\ -\tfrac{1}{2}$$

c.) Classify polynomial (monomial, binomial, trinomial)

$$\underline{\text{binomial}}$$

13.)

$$\tfrac{3x+4}{x} \implies \text{not a polynomial}$$

17.)

$$(6x + 5) - (8x + 15) \implies -(2x + 10) = -2x - 10$$

35.)

$$(3x - 5)(2x + 1) \Longrightarrow 6x^2 + 3x - 10x - 5 = 6x^2 - 7x - 5$$

49.)

$$(2x - y)^3$$

$$/* \ (\mu - \nu)^3 = \mu^3 - 3\mu^2\nu + 3\mu\nu^2 - \nu^3 \ */$$
$$(2x - y)(2x - y) \Longrightarrow 4x^2 - 2xy - 2xy + y^2 = 4x^2 - 4xy + y^2$$
$$(4x^2 - 4xy + y^2)(2x - y) \Longrightarrow 8x^3 - 4x^2y - 8x^2y + 4xy^2 + 2xy^2 - y^3$$
$$8x^3 - 4x^2y - 8x^2y + 4xy^2 + 2xy^2 + y^3 \Longrightarrow 8x^3 - 12x^2y + 6xy^2 - y^3$$
$$\therefore (2x - y)^3 = 8x^3 - 12x^2y + 6xy^2 - y^3$$

63.)

Subtract $4x^2 - 5$ from $-3x^3 + x^2 + 9$

$$(-3x^3 + x^2 + 9) - (4x^2 - 5)$$
$$-3x^3 - 3x^2 + 14$$