March 29, 2016

$(-5x+6)^5 = (-5x+6)(-5x+6)(-5x+6)(-5x+6)(-5x+6)$

$= (25x^2 - 60x + 36)(-5x+6)$

$= -125x^3 + 150x^2 + 300x^2 - 360x - 180x + 216$

$= (-125x^3 + 450x^2 - 540x + 216)(-5x+6)$

$= 625x^4 - 750x^3 - 2250x^3 + 2700x^2 + 2700x^2 - 3240x - 1080x + 1296$

$= (625x^4 - 3000x^3 + 5400x^2 - 4320x + 1296)(-5x+6)$

$= 3125x^5 + 3750x^4 + 13500x^4 - 18000x^3 - 27000x^3 + 32400x^2 + 21600x^2 - 25920x - 6480x + 7776$

$= 3125x^5 + 18750x^4 - 45000x^3 + 54000x^2 - 32400x + 7776$

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Relation: collection of ordered pairs

Function: for every element of the Domain there is only one element paired coming from the range

$T = \{(2,5), (3,6), (8,4), (5,1)\}$

Domain: $\{2, 3, 8, 5\}$

Range: $\{5, 6, 4, 1\}$

So T is a function

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$(2,5), (6,1), (3,8), (6,9)$

not a function because $(6,1) \neq (6,9)$

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$(-3,5), (4,5), (6,5), (13,5)$

Domain: $\{-3, 4, 6, 13\}$

Range: $\{5\}$

Is a function

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$3x^4y^2t + 5x^3 + 2y + 5$

$5x^3$: D: 3, $2y$: D: 1, 5: D: 0

Degree: $4+2+1 = 7$

Polynomial degree is 7

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* what is the meaning of an exponent.

$$\frac{(-2x^4y^{-5}z^2)^{-2}}{x^{-4}y^4z^{-3}}$$

$$\frac{1}{x^{-4}y^4z^{-3}(-2x^4y^{-5}z^2)^2}$$

$$\frac{1}{x^{-4}y^4z^{-3}4x^8y^{-10}z^4}$$

$$\frac{1}{4x^{-8}x^8y^4y^{-10}z^{-3}z^4}$$

$$\frac{1}{4x^2y^{-6}z}$$

$$\frac{y^6}{4x^2z}$$

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