Key

MATH 099

Review on Polynomial Operations & Exponents

I. Perform the indicated operations.

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

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

$-4x^2-3x+9$

(2) $3h^3t^2\cdot 2h^2t^5$

$6h^5t^7$

(3) $5a^3(3ab^3-a^2b^2-2a^3b)$

$15a^4b^3-5a^5b^2-10a^6b$

(4) $(2x-5)^2$

$4x^2-20x+25$

(5) $\dfrac{-9x^3+3x^2-15x}{-3x^2}$

$3x-1+\dfrac{5}{x}$

(6) $(w^3+2w^2-3)\div(w-2)$

$w-2\;\overline{)\;w^3+2w^2-3}$

$-w^3+2w^2$

$4w^2$

$-4w^2+8w$

$8w-3$

$-8w+16$

13

$w^2+4w+8+\dfrac{13}{w-2}$

II. Use the rules of exponents to simplify. Write answers with positive exponents only.

(7) $(-4)^{-2}$

$\left(-\frac{1}{4}\right)^2=\frac{1}{16}$

(8) $\left(\dfrac{2x^{-1}}{y^{-3}}\right)^{-2}$

$\dfrac{2^{-2}x^2}{y^6}=\dfrac{x^2}{4y^6}$

(9) $\dfrac{10b^5c^3}{-2b^5c^9}$

$\dfrac{-5}{c^6}$

(10) $(-2x^3y^2)^3$

$-8x^9y^6$

(11) $\left(\dfrac{-3a^4b^8}{6a^3b^{12}}\right)^4$

$\left(\dfrac{a}{-2b^4}\right)^4=\dfrac{a^4}{16b^{16}}$

(12) $(x+y)^0$

1

(13) $(4x^2y^{-3})^{-2}$

$4^{-2}x^{-4}y^6$

$\dfrac{y^6}{16x^4}$

(14) $\left(\dfrac{4}{3}\right)^{-2}$

$\dfrac{9}{16}$

(15) $(-ab)^3(-3a^2b)^2$

$(-a^3b^3)(9a^4b^2)$

$-9a^7b^5$