HOMEWORK 6.2 – Operations with Polynomials

Name: Key Date: Period:

Perform each operation.

1. $(4x^3 - 12x) + (-6x + 12x^3 - 3)$

$4x^3 - 12x$
$12x^3 - 6x - 3$

$16x^3 - 18x - 3$

2. $(-7 - 3x^2 - 6x^3) + (6x^2 + 10 + 10x^3)$

$-6x^3 - 3x^2 - 7$
$10x^3 + 6x^2 + 10$

$4x^3 + 3x^2 + 3$

3. $(6a - 7a^4 - 14) - (4a^3 + 3a^4 - 5a)$

$-7a^4 + 0a^3 + 6a - 14$
$-3a^4 - 4a^3 + 5a$

$-10a^4 - 4a^3 + 11a - 14$

4. $(3x^2 + x^4 - 6x + 2) - (15x^4 + 2x^3 - 6x^2 + 5x - 3)$

$x^4 + 0x^3 + 3x^2 - 6x + 2$
$-15x^4 - 2x^3 + 6x^2 - 5x + 3$

$-14x^4 - 2x^3 + 9x^2 - 11x + 5$

5. $-(3y^5 + 6y^4 - 7y^3 - 5) + (y^5 - y^4 + 3y^2 - 2y - 8)$

$-3y^5 - 6y^4 + 7y^3 + 0y^2 + 0y + 5$
$y^5 - y^4 + 0y^3 + 3y^2 - 2y - 8$

$-2y^5 - 7y^4 + 7y^3 + 3y^2 - 2y - 3$

6. $(3x^2y)(5x^3z)$ monomial x Monomial

$15x^5y^1z^1$ = 7th degree

7. $(2x^2y^2)(4xy^5z^3)(-3x^5y^{10}z^{18})$

$-24x^8y^{17}z^{21}$

8. $4a(a^2 - 2)$ monomial x binomial

$4a^3 - 8a$

9. $4x^2(3x - y + 5x^2y)$ Monomial × Trinomial

$12x^3 - 4x^2y + 20x^4y$

$20x^4y + 12x^3 - 4x^2y$

10. $(4x+5)(3x-2)$ FOIL

$12x^2 - 8x + 15x - 10$

$12x^2 + 7x - 10$

11. $(-5x+7)^2$

$(-5x+7)(-5x+7)$

$25x^2 - 35x - 35x + 49$

$25x^2 - 70x + 49$

12. $(x^2-2)(4x^2-3x+2)$

$4x^4 - 3x^3 + 2x^2$
$- 8x^2 + 6x - 4$

$4x^4 - 3x^3 - 6x^2 + 6x - 4$

13. $(3b+5)(2b^3-4b^2+b-1)$

$6b^4 - 12b^3 + 3b^2 - 3b$
$+ 10b^3 - 20b^2 + 5b - 5$

$6b^4 - 2b^3 - 17b^2 + 2b - 5$

14. $\frac{20x^3 - 15x}{5x}$

$\frac{20x^3}{5x} - \frac{15x}{5x}$

$4x^2 - 3$

15. $\frac{12x^{12} - 8x^8 + 4x^6}{4x^4}$

$\frac{12x^{12}}{4x^4} - \frac{8x^8}{4x^4} + \frac{4x^6}{4x^4}$

$3x^8 - 2x^4 + x^2$

16. $\frac{90xy^3 + 18xy^2 - 45x^2y}{9xy}$

$\frac{90xy^3}{9xy} + \frac{18xy^2}{9xy} - \frac{45x^2y}{9xy}$

$10y^2 + 2y - 5x$ or $10y^2 - 5x + 2y$