 Name_____

Basic Polynomial Operations

Date_____ Period____

Name each polynomial by degree and number of terms.

1) $-10x$

2) $-10r^4 - 8r^2$

3) 7

4) $9a^6 + 3a^5 - 4a^4 - 3a^2 + 9$

5) $-3n^3 + n^2 - 10n + 9$

6) $7x^2 - 9x - 10$

7) $-4b$

8) $-9 + 7n^3 - n^2$

9) Critical thinking: Why is it impossible to have a linear trinomial with one variable?

Simplify each expression.

10) $(4m^4 - m^2) + (5m^2 + m^4)$

11) $(5x + x^4) - (3x^4 + 4x)$

12) $(5 + 7x^3 + 3x^2) + (-12 + 5x + 6x^2)$

13) $(4 + 3x^2 + 8x^3) + (-7x^3 + 12x^5 + 6x^2)$

14) $(13m^4 + 2) + (m^4n^2 + 2 - 2m^4) - (-13m^2n^3 + 5m^4)$

15) $(-10mn^3 - 4n^4) - (-2n^4 - 7mn^3 - 6n^3) - (5n^3 + 6mn^3)$

Find each product.

16) $(2n + 3)(n - 2)$

17) $(5v - 1)(4v + 3)$

18) $(2r - 2)(-r - 7)$

19) $(3x + 5)(3x - 6)$

20) $(-4x^2 - 5x - 1)(4x^2 - 6x - 2)$

21) $(x^2 - 2x - 8)(-x^2 + 3x - 5)$

22) $(-4m - 4n)(-6m - 6n)$

23) $(8u + 4v)(6u + 6v)$

Critical thinking questions:

24) Simplify: $(a + b)(c + d)$

25) Simplify and then classify by degree and number of terms:
$2x + 3x^2(4x - 5)$