

Unit 1 Review

Date _____ Period _____

Determine if the following are polynomials. If it is a polynomial write in standard form, state the degree, leading coefficient and the constant.

1) $-5p^2 - 9p + 2p^6$

SF:

D:

LC:

C:

2) $-10m^4 - 5 - 6m^2 + 3m^3$

SF:

D:

LC:

C:

Simplify each expression.

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

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

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

Solve for (?)

6) $(8 - 6x^2 + 2x^4) - (?) = 3x^4 + 2x^2 + 2$

7) $(?) - (3r + 2r^2 + r^3) = 8r^4 + r^3 - 2r^2 - 9r$

Find each product.

8) $(2p - 4)(3p + 6)$

9) $(3p^2 - 4p + 1)(p^2 - 6p - 2)$

10) $(7n - 2)(4n^2 - 4n + 2)$

Factor each completely.

11) $2b^2 - 4b$

12) $3v^2 + 30v$

13) $25r^2 - 1$

14) $9x^2 - 16$

15) $5x^2 - 125$

16) $r^2 + 12r + 20$

17) $k^2 - 10k + 25$

18) $7r^2 + 4r - 3$

19) $6r^3 - 11r^2 - 7r$

20) $9x^3 - 3x^2 - 56x$

Solve each equation by factoring.

21) $a^2 - 4a - 21 = 0$

22) $b^2 + 4b - 4 = -7$

23) $3v^2 + 2v - 17 = 4$

24) $x^2 - 13x = -40$

25) $x^2 + 4x - 5 = 0$