Polynomials

Name each polynomial by degree and number of terms.

1) $-10x^5 + 7x^2$

2) $m^6 - 9m^2 + 3 - 10m^3$

3) $4n + 9$

4) -8

5) $5a^5 + 8a^4$

6) $-5x^3 - 6x + 6$

7) $6x^2 - 6 + 8x^3 - 7x$

8) $4k^3 + 6k - 9k^4$

Simplify each expression.

9) $(5m^4 - 8 + 4m^2) + (7 - 2m^2 - 7m^4)$

10) $(5x^4 - x - 5) - (3 - 2x^4 + 2x^3)$

11) $(5 - 7a^3 - 8a^2) + (5a + 1 - 6a^3)$

12) $(5m + m^4 + 7m^3) + (5m^3 - 7m + 3m^4)$

13) $(x + 4x^3) - (-2x^3 - 13x - 12x^4)$

14) $(-12n^3 + 2n^5) + (-6n^5 - 9n + n^3)$

Find each product.

15) $(3r - 2)(2r + 4)$

16) $(4p + 4)(p - 3)$

17) $4(5m^2 - 3m + 3)$

18) $3k(2k^2 + 3k + 1)$

19) $(3b + 5)(3b^2 - 5b + 1)$

20) $(b - 2)(4b^2 - b + 2)$

21) $(4n - 3)(4n + 3)$

22) $(3x^2 - 6)^2$

23) $(8 - 7n)^2$

24) $(5r^2 + 6r - 6)(8r + 4)$

25) $(7m^2 - 3m + 5)(8m + 1)$

26) $(3 - 8x)(3 + 8x)$

Polynomials

Name each polynomial by degree and number of terms.

1) $-10x^5 + 7x^2$
quintic binomial

2) $m^6 - 9m^2 + 3 - 10m^3$
sixth degree polynomial with four terms

3) $4n + 9$
linear binomial

4) -8
constant monomial

5) $5a^5 + 8a^4$
quintic binomial

6) $-5x^3 - 6x + 6$
cubic trinomial

7) $6x^2 - 6 + 8x^3 - 7x$
cubic polynomial with four terms

8) $4k^3 + 6k - 9k^4$
quartic trinomial

Simplify each expression.

9) $(5m^4 - 8 + 4m^2) + (7 - 2m^2 - 7m^4)$
$-2m^4 + 2m^2 - 1$

10) $(5x^4 - x - 5) - (3 - 2x^4 + 2x^3)$
$7x^4 - 2x^3 - x - 8$

11) $(5 - 7a^3 - 8a^2) + (5a + 1 - 6a^3)$
$-13a^3 - 8a^2 + 5a + 6$

12) $(5m + m^4 + 7m^3) + (5m^3 - 7m + 3m^4)$
$4m^4 + 12m^3 - 2m$

13) $(x + 4x^3) - (-2x^3 - 13x - 12x^4)$
$12x^4 + 6x^3 + 14x$

14) $(-12n^3 + 2n^5) + (-6n^5 - 9n + n^3)$
$-4n^5 - 11n^3 - 9n$

Find each product.

15) $(3r - 2)(2r + 4)$
$6r^2 + 8r - 8$

16) $(4p + 4)(p - 3)$
$4p^2 - 8p - 12$

17) $4(5m^2 - 3m + 3)$
$20m^2 - 12m + 12$

18) $3k(2k^2 + 3k + 1)$
$6k^3 + 9k^2 + 3k$

19) $(3b + 5)(3b^2 - 5b + 1)$
$9b^3 - 22b + 5$

20) $(b - 2)(4b^2 - b + 2)$
$4b^3 - 9b^2 + 4b - 4$

21) $(4n - 3)(4n + 3)$
$16n^2 - 9$

22) $(3x^2 - 6)^2$
$9x^4 - 36x^2 + 36$

23) $(8 - 7n)^2$
$64 - 112n + 49n^2$

24) $(5r^2 + 6r - 6)(8r + 4)$
$40r^3 + 68r^2 - 24r - 24$

25) $(7m^2 - 3m + 5)(8m + 1)$
$56m^3 - 17m^2 + 37m + 5$

26) $(3 - 8x)(3 + 8x)$
$9 - 64x^2$