

Test 4 Study Guide

Date _____ Period _____

Name each polynomial by degree and number of terms.

1) $2n^2 - 6 - 2n$

quadratic trinomial

2) $-10x$

linear monomial

3) $-10b - 10b^2 - b^3 + 1$

cubic polynomial with four terms

4) $9 - 3k + 7k^3$

cubic trinomial

5) $-n^4 + 7n^3 - 8n$

quartic trinomial

6) $7m$

linear monomial

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

quartic polynomial with four terms

8) $7n^2 + 2n - 7n^4 - 5n^6 - 6$

sixth degree polynomial with five terms

9) $8n^2 + n^6 - 3n^3 + 10n^5$

sixth degree polynomial with four terms

10) $5x + 9x^4 - 1 + 6x^3 - 2x^2$

quartic polynomial with five terms

Simplify each expression.

11) $(2x^3 + 4x^4) - (1 - 5x^4)$

 $9x^4 + 2x^3 - 1$

12) $(5n + 4n^4) + (3n - 2n^4)$

 $2n^4 + 8n$

13) $(v^2 + 4v) + (2v^2 - v)$

 $3v^2 + 3v$

14) $(3 + 5x^2) + (4x^2 - 2)$

 $9x^2 + 1$

15) $(7m^4 - 7m + 10m^2) - (8m^4 - 10m + 10m^3)$

 $-m^4 - 10m^3 + 10m^2 + 3m$

16) $(-11p - 4p^5 + 7) + (-6p^5 + 14p - 4)$

 $-10p^5 + 3p + 3$

$$17) (6p - p^2 + 11p^4) + (-5p - 11p^2 + 8p^5)$$

$$8p^5 + 11p^4 - 12p^2 + p$$

$$18) (-9x^4 - 11x^3 - 8) + (-x^2 + 3x^4 - 6)$$

$$-6x^4 - 11x^3 - x^2 - 14$$

$$19) (9k^2 + 8k + 2k^5) + (2k^2 + 3k + 9k^5)$$

$$11k^5 + 11k^2 + 11k$$

$$20) (-6k + 10 + 9k^4) + (-7 + 11k^4 - 4k)$$

$$20k^4 - 10k + 3$$

$$21) (-3x^2y + 12) + (-2x^2y^4 - 9x^2y - 12) + (7x^3y^3 - 4)$$

$$-2x^2y^4 + 7x^3y^3 - 12x^2y - 4$$

$$22) (-4x^3 + 8x^2y^4) + (13x^2y^4 - 14y^2 - x^3) - (-12x^2y^4 - 2y^2)$$

$$33x^2y^4 - 5x^3 - 12y^2$$

$$23) (-5m^2n^4 - 5n^4) - (-11n^2 - 6n^4 - m^2n^4) - (7n^2 + 2n^4)$$

$$-4m^2n^4 - n^4 + 4n^2$$

$$24) (11x^3y^4 - 4x^2y^2) + (-14x^3y^4 + 13x^4y - 9x^2y) + (-14x^2y^2 + x^2y)$$

$$-3x^3y^4 + 13x^4y - 18x^2y^2 - 8x^2y$$

$$25) (7x^3y^3 - 14xy^3) - (-5xy^3 - 4y^3 - 13x^3y^3) - (4x^3y^3 - 5xy^3)$$

$$16x^3y^3 - 4xy^3 + 4y^3$$

$$26) (2y^4 - x^4y^4) - (5y^3 + 11x^4y^4 + 11x^4) + (9x^4 - 4y^4)$$

$$-12x^4y^4 - 2y^4 - 2x^4 - 5y^3$$

$$27) (6ab - 5a^4b^2 - 13ab^3 - 7a^2b^3) - (-3ab - 11a^4b^2 - 5a^2b^3 - 14ab^3) + (-9a^2b^3 - 11a^4b^2 - 7ab - 3ab^3)$$

$$-5a^4b^2 - 11a^2b^3 - 2ab^3 + 2ab$$

$$28) (-9 + 3x^3y^3 + x + 6xy^3) + (xy^2 + 10 + 3x^4 - 11x^3y^3) + (3 + x^2y^2 - x^4 + 12xy^3)$$

$$-8x^3y^3 + 18xy^3 + 2x^4 + x^2y^2 + xy^2 + x + 4$$

Find each product.

$$29) 5(6n + 8)$$

$$30n + 40$$

$$30) 7x(5x - 6)$$

$$35x^2 - 42x$$

$$31) 5x(2x - 2)$$

$$10x^2 - 10x$$

$$32) 7(4p - 4)$$

$$28p - 28$$

$$33) 5(6x^2 - x + 2)$$

$$30x^2 - 5x + 10$$

$$34) 5(2x^2 + 5x + 4)$$

$$10x^2 + 25x + 20$$

$$35) 6(8k^2 + 7k - 4)$$

$$48k^2 + 42k - 24$$

$$36) 3(4m^2 + 7m + 5)$$

$$12m^2 + 21m + 15$$

$$37) (3x - 4)(4x + 3)$$

$$12x^2 - 7x - 12$$

$$38) (8r + 3)(2r + 3)$$

$$16r^2 + 30r + 9$$

$$39) (r - 7)(r - 4)$$

$$r^2 - 11r + 28$$

$$40) (r + 7)(7r - 7)$$

$$7r^2 + 42r - 49$$

$$41) (4v + 4)(6v^2 + 2v - 1)$$

$$24v^3 + 32v^2 + 4v - 4$$

$$42) (2n - 3)(7n^2 + 3n + 7)$$

$$14n^3 - 15n^2 + 5n - 21$$

$$43) (4p - 8)(4p^2 - 8p + 2)$$

$$16p^3 - 64p^2 + 72p - 16$$

$$44) (6n - 8)(6n^2 - 7n + 6)$$

$$36n^3 - 90n^2 + 92n - 48$$

$$45) (4m^2 + m + 7)(m^2 + 4m - 3)$$

$$4m^4 + 17m^3 - m^2 + 25m - 21$$

$$46) (3n^2 + 8n - 6)(4n^2 - n - 1)$$

$$12n^4 + 29n^3 - 35n^2 - 2n + 6$$

$$47) (5x^2 - x - 2)(3x^2 + x - 8)$$

$$15x^4 + 2x^3 - 47x^2 + 6x + 16$$

$$48) (4n^2 - 8n + 2)(6n^2 - 2n - 4)$$

$$24n^4 - 56n^3 + 12n^2 + 28n - 8$$

Find each coefficient described.

$$49) \text{Coefficient of } v^3 \text{ in expansion of } (v + 2)^4$$

$$8$$

$$50) \text{Coefficient of } x^2y^2 \text{ in expansion of } (x + y)^4$$

$$6$$

$$51) \text{Coefficient of } x \text{ in expansion of } (1 - 2x)^3$$

$$-6$$

$$52) \text{Coefficient of } uv^2 \text{ in expansion of } (u - v)^3$$

$$3$$

Find each term described.

$$53) \text{3rd term in expansion of } (u + 3)^3$$

$$27u$$

$$54) \text{1st term in expansion of } (y - 2)^3$$

$$y^3$$

$$55) \text{3rd term in expansion of } (m + n)^4$$

$$6m^2n^2$$

$$56) \text{4th term in expansion of } (x + 4)^3$$

$$64$$

Expand completely.

$$57) (2y - 1)^4$$

$$16y^4 - 32y^3 + 24y^2 - 8y + 1$$

$$58) (x + 3y)^4$$

$$x^4 + 12x^3y + 54x^2y^2 + 108xy^3 + 81y^4$$

$$59) (y - x)^3$$

$$y^3 - 3y^2x + 3yx^2 - x^3$$

$$60) (2y + 1)^3$$

$$8y^3 + 12y^2 + 6y + 1$$