

ANSWER SHEET

Instructions: Place your answers to all problems on this sheet. Attach your work for the problems on the back. If answer doesn't fit on the answer sheet and is on your solution paper, indicate that in the answer slot below by writing "on solution paper".

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Worksheet: _____

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Solve the problems on a separate sheet of paper. Also, write your answers on the answer sheet.

Section 5-4 – Adding and Subtracting Polynomials; Graphing Simple Polynomials

Determine the number of terms in the polynomial and name the coefficients of the terms.

1. $-4b^3 + 2b^2 - 3b$

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

3. $-\frac{2}{3}y^2 + \frac{4}{3}y$

Add like terms whenever possible. Write the result in descending powers of the variable.

4. $7z^3 - 4z^3 + 5z^3 - 11z^3$

6. $-\frac{1}{2}r^3 + \frac{1}{3}r + \frac{1}{4}r^3 - \frac{1}{3}r$

5. $4y^4 - 7y^2 + 4 - 7y^3 + 9y^4 - 2y^2 - 3y$

Choose one or more of the following descriptions for each expression:

(a) Polynomial

(c) Not a polynomial

(b) Polynomial written in descending order

7. $-2w^3 + 9w^2 + 4w - 10$

8. $3z^5 - 4a^3 - 3a^{-1} + 5$

Evaluate the polynomials at $x = 3$.

9. $-x^2 + 5x - 9$

10. $2x^3 + 4x^2 - 7x + 3$

Add the polynomials

11.
$$\begin{array}{r} 5m^4 + 2m^3 - 4 \\ -3m^4 + 5m^3 - 3 \\ \hline \end{array}$$

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

Subtract the polynomials

13.
$$\begin{array}{r} 6m^3 - 5m \\ 7m^3 - 3m \\ \hline \end{array}$$

14. $(2x^3 - 4x^2 + 3x + 10) - (6x^3 - 4x + 2)$

Section 5.5 – Multiplying Polynomials

Find the product.

15. $7z(5z^2 + 2)$

16. $-3y^2(2y^3 + 3y^2 - 4y + 11)$

17. $-3r^2s^3(8r^2s^2 - 4rs + 2rs^2)$

Find the product.

18. $(x + 3)(x + 9)$

19. $(y + 4)(y^2 - 4y + 16)$

Find product using vertical method of multiplication.

20. $(2x + 3)(2x^2 - 3x + 2)$

21. $(2x^2 + 3x + 2)(4x^3 + 2x + 3)$

Use the FOIL method to find each product.

22. $(4m + 3)(m - 7)$

23. $(2v^2 + w^2)(v^2 - 3w^2)$

Section 5.6 – Special Products

Find each square by using the pattern for the square of a binomial.

24. $(a + 2b)^2$

25. $(2m + 5)^2$

26. $(2m - 3p)^2$

Find each product by using the pattern for the sum and difference of two terms.

27. $(12 + x)(12 - x)$

28. $(7x - 3y)(7x + 3y)$

29. $(y^2 + 2)(y^2 - 2)$

Find the product

30. $(2x - 3)^3$

Section 5.7 – Dividing Polynomials

Divide each polynomial by $3m^3$

31. $12m^4 - 9m^3 + 6m^2$

32. $-54m^3 + 30$

Perform the given division.

33. $\frac{12x^6 + 18x^5 + 30x^3}{6x^2}$

34. $(m^2 + 3m - 12) \div 2m$

35. $\frac{18a^2 - 9a - 5}{3a + 1}$

36. $\frac{2z^3 - 7z^2 + 3z + 2}{2z + 3}$