Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ date: \_\_\_\_\_\_\_\_\_\_\_\_\_ period: \_\_\_\_\_\_\_

***COLLEGE PREP ~ CHAPTER 5A REVIEW (Sections “Prep for Chapter 5” – 5.3)***

***“Prep for Chapter 5” Section***

You should know:

* *The Laws of Exponents*

Zero Exponent Rule: Negative Exponent Rule:

Product Rule: Quotient Rule:

Power Rule: Power of a Product Rule:

Power of a Quotient: Quotient to a Negative Power:

* How to convert decimal notation to Scientific Notation, and vice versa.
* Multiply and Divide values written in Scientific Notation.

***Simplify each of the following expressions.***

**1.** **2.** **3.**

**4.** **5**. **6.**

**7.** **8.** **9.**

***Write each number in scientific notation.***

**10.** **11.** **12.**

***Perform the indicated operation. Express your answer in scientific notation.***

**13**. **14.**

***Sections 5.1/5.2 ~ Adding, Subtracting and Multiplying Polynomials***

You should know how to:

* Determine the degree of a polynomial (add the exponents of the terms, the highest sum is the degree).
* Determine if an expression is a polynomial (variables should have positive integer exponents).
* Determine if a polynomial is a monomial (one term), a binomial (two terms) or a trinomial (three terms).
* Simplify polynomials by combining like terms (addition and subtraction).
* Multiply polynomials (multiply coefficients, and add exponents on like variables). This includes multiplying a monomial by a polynomial (distribution), two binomials (distribution/FOIL), and polynomial by polynomial (repeated distribution).
* Evaluate polynomial functions.

***Determine the degree and coefficient of each monomial.***

**15.** **16.** **17.**

***Determine the degree of each polynomial and identify it as a binomial, trinomial, or polynomial.***

**18**. **19.** **20.**

***Simplify each of the following. Be sure you pay attention to whether you are supposed to add, subtract, or multiply!***

**21.** **22**.

**23.** **24.**

**25**. **26**.

**27**. **28**.

**29**. **30**.

***Find the indicated function or function value.***

**31**. **32.**

a) a)

b) b)

**33**. **34.** Find

a)

b)

***Section 5.4 ~ Division of Polynomials and Synthetic Division***

You should know how to:

* Divide a polynomial by a monomial (split it up and divide each piece.)
* Divide polynomials using long division.
* Divide polynomials using synthetic division (for the special case when the divisor is in the form .)
* Divide polynomial functions (Replace function names with polynomials and divide).
* Use the Remainder theorem and the Factor theorem.

***Divide the following problems. Use whatever method you would like.***

**35.** **36.**

**37.** **38.**

**39**. **40.**

**41**. Find if

**42.** Use the Remainder Theorem to find the remainder if is divided by .

**College Prep Chapter 5A Review Key:**

1. 2. 3. 4. 5. 6. 7.

8. 9. 10. 11. 12.

13. 14. 15. Degree is 4, coefficient is -7 16. Degree is 3, coefficient is 1/9

17. degree is 5, coefficient is 3 18. 3 19. 4 20. 5 21. 22.

23. 24. 25. 26.

27. 28. 29.

30. 31.a) -24 b) -29 32.a) b)

33. a) 33.b) 91 34. 35.

36. 37. 38. 39.

40. 41. 42. 59

**College Prep Chapter 5A Review Key:**

1. 2. 3. 4. 5. 6. 7.

8. 9. 10. 11. 12.

13. 14. 15. Degree is 4, coefficient is -7 16. Degree is 3, coefficient is 1/9

17. degree is 5, coefficient is 3 18. 3 19. 4 20. 5 21. 22.

23. 24. 25. 26.

27. 28. 29.

30. 31.a) -24 b) -29 32.a) b)

33. a) 33.b) 91 34. 35.

36. 37. 38. 39.

40. 41. 42. 59