Algebra 1 Chapter 8 Review Final Exam Spring 2014

Simplify each. Write your answer so that no exponents are zero or negative. Do not use decimals, if needed leave coefficients as fractions in reduced form.

1. A^{-2} 2. $6M^{-4}$ 3. $-10R^5K^{-2}$ 4. $\frac{8X^4E^{-2}}{T^{-5}H}$ 5. $\frac{1}{G^{-3}}$

6. B^0 7. $15^0W^3J^{-4}$ 8. $12X^0$ 9. Y^5Y 10. $N^{-6}N^{10}N^0$

11. C^4C^{-6} 12. $(5A^4D^{-5})(3AD^{-6})$ 13. $(-R^{10}T^5V)(8R^{-4}T^2V^{-9})$

14. $(7^0C^8E^7Q)(E^9Q^4)$ 15. $(5M^3N^2P^4)(9MN^5P^{-2})(2M^{-4}N^2P^6)$

16. $(-3G^4H^9)(-6G^{-3}H^{-5})$ 17. $(T^3)^2$ 18. $(W^{-2})^{-3}$ 19. $(K^3)^{-6}$

20. $(Y^4)^0$ 21. $(10M^5R^3)^3$ 22. $(-5T^4W^{-3})^2$ 23. $(-4A^5B^4)^3$

24. $(4M^{-3}N)^2(10M^5N^4)$ 25. $(3T^8R^{-4})^{-2}$ 26. $(7J^{-2}H^3)^2(-H^3J^4)^5$

27. $(E^7F^4G)^3(E^3F^4G^5)^{-2}$ 28. $\frac{H^{12}}{H^7}$ 29. $\frac{12M^5}{4M^2}$ 30. $\frac{-15A^4C^5}{5A^{-2}C^2}$

31. $(\frac{144X^{25}Y^{-16}}{128X^{18}Y^{-14}})^0$ 32. $\left(\frac{8}{F^3}\right)^{-2}$ 33. $\left(\frac{G^5H^4J^3}{G^2H^3}\right)^2$ 34. $\left(\frac{5A^4B^2}{AB^5}\right)^{-2}$

35. $\frac{-24M^4X^9}{12MX^8}$

Evaluate for $A = 4$ $B = -2$ $C = 6$. Leave fractional answers in reduced form, NO DECIMALS.

36. $A^{-2}C^2$ 37. $\frac{8C}{B^{-3}}$ 38. $B^{-1}C^{-2}$ 39. $\frac{B^2}{5^{-1}C}$

Standard Form of an exponential equation: $y = ab^x$

40. State if each exponential equation represents growth or decay.

a) $y = 489(0.9975)^x$ b) $y = 1.36(1.0012)^x$ c) $y = 185(\frac{13}{14})^x$

41. Write the growth/decay factor (b) that each % change represents.

a) 23% increase b) 17.4% decrease c) 0.933% increase d) 1.04% decrease

42. For each growth/decay factor in the exponential equations below give the % change and state if it's an increase or decrease.

a) $y = 375(.982)^x$ b) $y = 2.58(1.954)^x$ c) $y = 6(1.085)^x$ d) $y = 2,750(0.37)^x$

43. You have an investment that increases in value 6.5% each year. The value of the account in 2008 was $52,400.

a) Find the value of the account in 2001.

b) Find the vlaue of the account in 2015.

44. The population of a city has been decreasing 5.2% each year. The population of the city was 130,000 in 1996.

a) Find the population in 2010.

b) Find the population in 1985.