Name: Date: Period:

Score:	First attempt due:
	Final corrections due:

Practice Worksheet:
Properties of Exponents

Simplify each expression completely using properties of exponents. Answers should have positive exponents only and all numbers evaluated, for example $5^3 = 125$. Each set of problems will use the property listed above as well as a combination of properties attempted in previous sets.

NEGATIVE EXPONENT AND ZERO EXPONENT PROPERTIES

1. $a^{-7} =$	2. $(21c^{18})^{-1} =$	3. $(3d^2)^0 =$	4. $5(x^0)y^{-1} =$

PRODUCT OF POWERS PROPERTY

5. $a^7a^{12} =$	6. $c^3c^8c^{-5} =$	7. $(2d^7)(-4d^9d^5) =$	8. $(9x^{10}y^3)(-x^5y^3) =$

QUOTIENT OF POWERS PROPERTY

9. $\frac{a^{12}}{a^7} =$	10. $\frac{6c^3}{3c^{-5}} =$	11. $\frac{2d^7}{-4d^9d^5} =$	12. $\frac{9x^{10}y^3}{-x^5y^3} =$

POWER OF A POWER PROPERTY

13. $(a^3)^4 =$	14. $(c^{-1})^3 =$	15. $(d^5)^{-2} =$	16. $(6x^3y)(x^2)^{-2} =$

Power of a Product Property

17. $(8a^5)^2 =$	18. $(2c^{-1})^{-3} =$	19. $(-2d^{10})^{-2} =$	20. $(4x^2y^3)^{-2}(-x^{10})^2 =$

Power of a Quotient Property

21. $\left(\frac{a}{2}\right)^4 =$	22. $\left(\frac{25c^{-1}}{5}\right)^2 =$	23. $\left(\frac{-2d^{11}f^5}{4d^{-2}f^2}\right)^2 =$	24. $\left(\frac{(-2x)^2}{3xy^2}\right)^3 =$

More Practice with Mixed Properties

25. $\left(\frac{a}{2}\right)^4 \frac{(8a^5)^2}{a^{-1}a^{10}} =$	26. $\left(\frac{16c^6c^{-2}}{(2c^2)^3}\right)^{-1} =$	27. $\frac{-2f}{d^5}\left(\frac{df^5}{-2f^{10}}\right)^2 =$	28. $\left(\frac{(4x^2y^3)^0}{-3x^{-1}y^2}\right)^3 =$

Bonus Questions

29. $\left(\frac{9}{20}d^5\right)(2d^{-2})\left(\frac{4}{3}d^9\right)$	30. $\frac{8(-m^0n^2)^3(-n^3)^2}{m^6n^0(-2m^{-2}n^4)^3}$