Name_____ Functions and Statistics Per _____

Topic: Exponent Laws Date: _____

Law 1: $x^a \cdot x^b = x^{a+b}$	1. $x^3 \cdot x^5 =$ 2. $y^2 y^7 y =$ 3. $2^3 2^2 =$ 4. $(2a^3bc^5)(3ab^2c) =$
Law 2: $(x^a)^b = x^{ab}$	5. $(x^3)^5 =$ 6. $(y^2)^7 =$ 7. $(2^3)^2 =$
Law 3: $(cx^a)^b = c^b x^{ab}$	8. $(2x^5)^3 =$ 9. $(5y^7 z^{11})^4 =$
Law 4: $\left(\frac{x^a}{y^b}\right)^n = \frac{x^{an}}{y^{bn}}$	10. $\left(\frac{s^3}{t^5}\right)^7 =$ 11. $\left(\frac{u^2}{v^4}\right)^3 =$

Self test: 1. $e^2 e^3 =$ 2. $(4d^3e^8)^3 =$ 3. $(f^2)^4 =$

4. $f^2 f^4 =$ 5. $(7t^2)(2t^4) =$

Law 5: $\frac{x^a}{x^b} = \begin{cases} x^{a-b}, if..a > b \\ \frac{1}{x^{b-a}}, if..b > a \\ 1, if..a = b \end{cases}$	12. $\frac{y^6}{y^2} =$ 13. $\frac{y^2}{y^6} =$ 14. $\frac{y^2}{y^2} =$
Law 6: $x^0 = 1, if..x \neq 0$	15. $y^0 =$ 16. $7^0 =$ 17. $(4ab^{11})^0 =$
Law 7: $x^{-a} = \frac{1}{x^a}$	18. $y^{-4} =$ 19. $2t^{-5} =$ 20. $(2t)^{-5} =$
Law 8: $\frac{1}{x^{-a}} = \frac{1}{\frac{1}{x^a}} = x^a$	21. $\frac{4}{x^{-4}} =$ 22. $\frac{s^{-3}t^3}{s^2t^{-2}} =$
Law 9: $\left(\frac{x}{y}\right)^{-a} = \left(\frac{y}{x}\right)^a$	23. $\left(\frac{s}{t}\right)^{-3} =$ 24. $\left(\frac{b^3}{c^2}\right)^{-4} =$