

Full Name: _____ Period: _____ ID: A

*Directions: **Show some thinking for each question** for maximum credit. You may not use a calculator on this test. Each question worth 5 points unless noted. "Tell the truth - all the time!"*

Properties of Exponents Algebra 8r Test (Mazzeo 2011)

Short Answer: simplify the expressions.

12 - 14 total questions

5, 10 and 15 point questions

**you may use a 4 × 6 index card with notes on both sides; this card will be handed to me when you enter and returned to you after I look it over
no calculator**

test worth 100 points

one bonus question at end of test

(5 point question) 5-6 like these

$$(9x^4y)^2 \cdot x^3$$

$$\left(\frac{-6x^3}{3x^{-2}} \right)^{-2}$$

(10 point question) 2-3 like this one

$$\frac{6x^{-2}y^3}{x^3y^{-2}} \cdot \frac{(4xy^4)^{-1}}{xy}$$

(10 point question) 2 like this one where you must write in both standard and scientific notation

$$\frac{(4.2 \times 10^{-3})}{(2.1 \times 10^{-5})}$$

(15 point question) two like this one

$$\left(\frac{2xy^{-3}}{3x^{-2}y} \right)^{-3} \left(\frac{4xy}{2x^{-2}y^{-4}} \right)^3$$

(15 point question) two like this one

$$\left(\frac{2xy^{-3}}{3x^{-2}y} \right)^{-3} \left(\frac{4xy}{2x^{-2}y^{-4}} \right)^3$$

$$\left(\frac{2x^2y^{-3}}{3y^3} \right)^{-3} \left(\frac{4x^2y^4}{2} \right)^3$$

$$\left(\frac{3y^4}{2x^3} \right)^3 \left(2x^3y^5 \right)^3$$

$$\frac{27y^{12}}{8x^9}$$

$$8x^9y^{15}$$

$$a^{-m} = \frac{1}{a^m}$$

$$a^m a^n = a^{m+n}$$

$$(a^m)^n = a^{mn}$$

$$\frac{27y^{12} \cancel{8x^9} y^{15}}{\cancel{8x^9}}$$

$$\frac{a^m}{a^m} = a^0 = 1$$

$$a^m a^n = a^{m+n}$$

$$27y^{27}$$