Name _____ Period _____

6.2A *Properties of Exponents*

#1 – 6: Multiple choice: Circle the correct answer

1. Which of the following is not equal to $\left(\frac{3}{4}\right)^0$? **[A]** 1^{23} **[B]** $\left(\frac{4}{3}\right)^0$ **[C]** 0^0	**2.** Simplify $3^2 \cdot 3^3$ **[A]** 3^5 **[B]** 3^6 **[C]** 9^5	**3.** Simplify $2^4 \cdot 2^3$ **[A]** 2^{12} **[B]** 2^7 **[C]** 4^7
4. Simplify $7^{12} \div 7^3$ **[A]** 7^4 **[B]** 7^9 **[C]** 7^{15}	**5.** Simplify $\left(3^2\right)^8$ **[A]** 3^{16} **[B]** 3^{10} **[C]** 3^6	**6.** Simplify $2^3 + 2^2$ **[A]** 10 **[B]** 12 **[C]** 32

7. True or False? If the equation is false, then correct it to make it true.

a) $5x^2 \cdot \left(2x^3\right)^3 = 40x^{11}$ — $5x^2 \cdot 8x^9 = 40x^{11}$ ✓ True

b) $6x^2 + (3x)^2 = 9x^2$ — $6x^2 + 9x^2 = 15x^2$ False

c) $\left(2x^5z^4\right)^3 = 6x^{15}z^{12}$ — $= 8x^{15}z^{12}$ False

8. Is the following statement true? $\left(x^a\right)^b = \left(x^b\right)^a$? Why or why not?

True — Using Power of a Power Rule, $x^{ab} = x^{ba}$, $ab = ba$ commutative property of multiplication

9. Is the following statement true? $\left(x^2\right)^3 = x^{2+3}$? Why or why not?

False — Using Power of a Power rule $(x^2)^3 = x^{2 \cdot 3} = x^6$

Name _____ Period _____

6.2A *Properties of Exponents*

#10 – 15: Simplify. Your answer should contain only positive exponents.

10. $4x^2x^3$

$4x^5$

11. $2k(3km)+4m(k^2)$

$6k^2m + 4k^2m$

$10k^2m$

12. $3x\cdot(2x^4)^3\cdot x^3$

$(3x)(8x^{12})\cdot x^3$

$24x^{16}$

13. $(3x^4y^5)^2$

$9x^8y^{10}$

14. $(2m^4)^3\cdot 2m^4$

$8m^{12}\cdot 2m^4$

$16m^{16}$

15. $(x^0)^4\cdot(2x^3)^3$

$(1)^4\cdot 8x^9$

$8x^9$

Section 6.2A