Pre-Calc Classwork – Exponents Review Name: _____

For questions 1-3, write each expression in radical form (using roots and powers).

1. $2^{\frac{5}{3}}$

2. $a^{\frac{6}{5}}$

3. $(5x)^{-\frac{1}{2}}$

For questions 4-6, write each expression in exponential form (using exponents only).

4. $(\sqrt[4]{5})^5$

5. $(\sqrt[3]{3a})^4$

6. $\frac{1}{(\sqrt{3k})^5}$

For questions 7-12, simplify each expression using the properties of exponents.

7. $(3a^2b^3)^2$

8. $(x^{-2}y^{-2})^3$

9. $(x^4)^{-3} \cdot 2x^4$

10. $\frac{2y^3 \cdot 3xy^3}{3x^2y^4}$

11. $\frac{2x^3}{(x^{-1})^3}$

12. $\frac{2k^3 \cdot k^2}{k^{-3}}$

For questions 13-15, simplify each expression.

13. $36^{\frac{3}{2}}$

14. $(9n^4)^{\frac{1}{2}}$

15. $(64n^{12})^{-\frac{1}{6}}$

Pre-Calc Homework – Exponents Review Name: _____

For questions 1-3, write each expression in radical form (using roots and powers).

1. $7^{\frac{4}{3}}$

2. $m^{-\frac{1}{2}}$

3. $(10n)^{\frac{3}{2}}$

For questions 4-6, write each expression in exponential form (using exponents only).

4. $\left(\sqrt[4]{2}\right)^5$

5. $\left(\sqrt[3]{6x}\right)^4$

6. $\sqrt[4]{v}$

For questions 7-12, simplify each expression using the properties of exponents.

7. $\left(4x^3y^4\right)^3$

8. $\left(a^2b^{-3}\right)^2$

9. $\left(n^3\right)^3 \cdot 2n^{-1}$

10. $\dfrac{3x^2y^2}{2x^{-1} \cdot 4yx^2}$

11. $\dfrac{2m^{-4}}{\left(2m^{-4}\right)^3}$

12. $\dfrac{\left(x^{-3}\right)^4 x^4}{2x^{-3}}$

For questions 13-15, simplify each expression.

13. $343^{-\frac{4}{3}}$

14. $(x^6)^{\frac{1}{2}}$

15. $(81m^6)^{\frac{1}{2}}$