

Alg1 Unit5 Review N.RN  
Exponents & Radicals

Name: \_\_\_\_\_

**Simplify using the properties of exponents.**

1.  $a^{-4}$

2.  $3w^5 \cdot 9w$

3.  $(4x^3)^2$

4.  $\frac{x^5y^9}{x^2}$

5.  $(g^{1/3})^9$

6.  $m^{1/7} \cdot m^{3/7}$

7.  $x^0$

8.  $3a^{-2}b^6c^0$

9.  $\frac{7xy^4}{x^6y^2}$

10.  $(3m^4n)^3 \cdot mn^2$

11.  $\left(\frac{c^3}{d}\right)^3 \cdot \frac{30c^4d}{5c^3d^2}$

12.  $\frac{5m^2}{p^{-6}}$

13.  $a^{1/4} \cdot a^{3/8}$

14.  $\left(\frac{x^{2/3}}{y^3}\right)^6$

**Rewrite in radical form.**

15.  $w^{\frac{4}{7}}$

16.  $26^{\frac{1}{4}}$

17.  $2x^{\frac{2}{3}}$

18.  $(2x)^{\frac{2}{3}}$

**Rewrite with rational exponents.**

19.  $\sqrt[3]{42^4}$

20.  $(\sqrt[5]{k})^2$

21.  $\sqrt[6]{34}$

22.  $\sqrt{x^9}$

**Simplify each radical.**

23.  $\sqrt{400}$

24.  $\sqrt[3]{1000}$

25.  $\sqrt[3]{864}$

26.  $\sqrt{320}$

27.  $9\sqrt[3]{250}$

28.  $5\sqrt{48}$

29.  $\sqrt{k^{14}}$

30.  $\sqrt[3]{k^{14}}$

31.  $\sqrt{72m^8}$

32.  $\sqrt{100x^5y^2}$

33.  $\sqrt[3]{27w^{10}}$

34.  $\sqrt{99a^4b^7}$

35.  $\sqrt[3]{48x^6y^5}$

36.  $\sqrt[6]{a^{12}b^6c^9}$