

Properties of Exponents—SIMPLIFY COMPLETELY!

1. $a^2 \cdot a^{10}$ a^{12}	2. $(a^4)^5$ a^{20}
3. $4a^3 \cdot -3a^9$ $-12a^{12}$	4. $(-a^6)^6$ a^{36}
5. 4^0 1	6. $-8x^0$ -8
7. $(5x^5)^3$ $125x^{15}$	8. $(-7q^5r)(-3q^6s^8)$ $21q^{11}rs^8$
9. $(-7)^{-2}$ $\frac{1}{49}$	10. $\frac{-2}{a^{-7}}$ $-2a^7$
11. $(9x^{-6})^{-2}$ $\frac{x^{12}}{81}$	12. $\frac{x^{-3}}{4b^{-1}}$ $\frac{b}{4x^3}$

Properties of Exponents—SIMPLIFY COMPLETELY!

1. $a^3 \cdot a^6$ a^9	2. $(a^2)^6$ a^{12}
3. $3a^4 \cdot -5a^9$ $-15a^{13}$	4. $(-a^3)^8$ a^{24}
5. 6^0 1	6. $-x^0$ -1
7. $(3x^4)^3$ $27x^{12}$	8. $(3q^4r)(-6q^7s^9)$ $-18q^{11}rs^9$
9. $(-5)^{-3}$ $\frac{1}{-125}$	10. $\frac{-3}{a^{-5}}$ $-3a^5$
11. $(6x^{-4})^{-2}$ $\frac{x^8}{36}$	12. $\frac{x^{-4}}{3b^{-1}}$ $\frac{b}{3x^4}$

Properties of Exponents—SIMPLIFY COMPLETELY!

1. $a^4 \cdot a^9$ a^{13}	2. $(a^3)^8$ a^{24}
3. $5a^4 \cdot -6a^9$ $-30a^{13}$	4. $(-a^3)^8$ a^{24}
5. 5^0 1	6. $-5x^0$ -5
7. $(4x^5)^3$ $64x^{15}$	8. $(-4q^3r)(-6q^2s^8)$ $24q^5rs^8$
9. $(-2)^{-4}$ $\frac{1}{16}$	10. $\frac{-2}{a^{-3}}$ $-2a^3$
11. $(3x^{-1})^{-4}$ $\frac{x^4}{81}$	12. $\frac{a^{-4}}{4b^{-3}}$ $\frac{b^3}{4a^4}$

13. $\frac{x^6}{x^2}$ x^4

14. $\frac{x^2}{x^6}$ $\frac{1}{x^4}$

15. $\frac{6x^6y}{3x^2y}$ $2x^4$

16. $\frac{3x^2y^8}{6x^6y}$ $\frac{y^7}{2x^4}$

17. $\left(\frac{2}{3}\right)^3$ $\frac{8}{27}$

18. $\left(\frac{2}{3}\right)^{-3}$ $\frac{27}{8}$

19. $\left(\frac{4x^2}{y}\right)^3$ $\frac{64x^6}{y^3}$

20. $\left(\frac{-4x^{-2}}{y}\right)^3$ $\frac{-64}{x^6y^3}$

21. $\frac{x^4 \cdot x^5}{x^2}$ x^7

22. $\frac{x^{-4} \cdot x^5}{x^2}$ $\frac{1}{x}$

Properties of Exponents

1. $a^3 \cdot a^8$ a^{11}	2. $(a^4)^9$ a^{36}
3. $3a^6 \cdot -6a^7$ $-18a^{13}$	4. $(-a^4)^6$ a^{24}
5. 2^0 1	6. $-7x^0$ -7
7. $(3x^4)^2$ $9x^8$	8. $(-4q^5r)(-6q^6s^9)$ $24q^{11}rs^9$
9. $(-3)^{-2}$ $\frac{1}{9}$	10. $\frac{-3}{a^{-4}}$ $-3a^4$
11. $(2x^{-2})^{-3}$ $\frac{x^4}{8}$	12. $\frac{a^{-3}}{5b^{-5}}$ $\frac{b^5}{5a^3}$

13. $\frac{x^8}{x^4}$ x^4

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

15. $\frac{8x^7y}{4x^3y}$ $2x^4$

16. $\frac{2x^3y^7}{6x^8y}$ $\frac{y^6}{3x^5}$

17. $\left(\frac{3}{4}\right)^2$ $\frac{9}{16}$

18. $\left(\frac{3}{4}\right)^{-2}$ $\frac{16}{9}$

19. $\left(\frac{2x^3}{y}\right)^4$ $\frac{16x^{12}}{y^4}$

20. $\left(\frac{-5x^{-3}}{y}\right)^2$ $\frac{25}{x^6y^2}$

21. $\frac{x^3 \cdot x^6}{x^2}$ x^7

22. $\frac{x^{-5} \cdot x^6}{x^2}$ $\frac{1}{x}$

Name: Key

Date: _____ Period: _____

Algebra 1
Exponents Review

Simplify. Leave no negative exponents.

1. $4x^{-2}y^{-3}z \cdot \frac{1}{8}x^4y^{-2}z^2$ $\frac{x^2z^2}{2y^5}$

2. $\left(\frac{4x^2y}{x^5y^2}\right)^2$ $\frac{16}{x^6y^2}$

$\frac{16x^4y^2}{x^{10}y^4}$

3. $4x(x+5)^0$ $4x$

4. $5x(2x^2y)^3$ $40x^7y^3$

$5x \cdot 8x^6y^3$

5. $2xy(-2x^{-3}y^2)^4$ $\frac{32y^9}{x^{11}}$

6. $\left(\frac{4y}{3z}\right)^{-2}$ $\frac{9z^2}{16y^2}$

$2xy \cdot 16x^{-12}y^8$

$$7. \frac{-4x^{-2}y^{-4}}{16x^{-4}y^5} = \frac{-x^2}{4y^9}$$

$$8. \frac{-4x^2}{y^6} \cdot \frac{-y^5}{24x} = \frac{x}{6y}$$

$$9. \frac{15x^3}{8y^5} \cdot \frac{2y^3}{5x^4} = \frac{3}{4x^3y^2}$$

$$10. -3x^2y^4(-x^{-2}y^{-3})^2 = \frac{-3}{x^2y^2}$$

$$-3x^2y^4 \cdot x^{-4}y^{-6}$$