Multiplying and Power to Power Practice

1. $a^2 \cdot a^3$
2. $x^5 \cdot x$
3. $5^2 \cdot 5^4$
4. $m^3 \cdot m^4 \cdot m^5$
5. $x^2 \cdot y^3 \cdot y^2$
6. $(3m^3)(2m^5)$
7. $(-5m^2)(-2m^4)$
8. $(6p^5)(8p^4)$
9. $(2x^2y)(3xy^4)$
10. $(-2a^2b^3)(3a^4)$
11. $5x^2y^3(-2x^4y^5)$
12. $(-8n^2m)(3m^2n^5)$
13. $(x^2)^3$
14. $(a^4)^2$
15. $(y^3)^4$
16. $d^2 \cdot (d^3)^4$
17. $(xy)^3$
18. $(x^2y)^4$
19. $(2a^2b^3)^2$
20. $(5a^3)^2$
21. $a^3 \cdot (a^2b)^4$
22. $(x^5)^2$
23. $(3^2)\ (3^2)^3$
24. $(2^5)\ (2^4)^2$

Algebra CC
Multiplying Monomials Practice

1. $m \cdot m^8$
2. $(2c^3)2c$
3. $(-7xy)(-2x)$
4. g^{-6}
5. q^0
6. $a^{-2}b^2$
7. $7xy^{-8}z$
8. $(-3x^2)(6x^2)$
9. $(-8ab)(a^2b^5)$
10. $(x^{-3})(x^2)$
11. $12m^{-6}n^4$
12. $(xy)(x^3y^3)$
13. $(b^3)(b^{-5})$
14. $x^{-3}y^2z^{-4}$
15. $(-7xy\ \ )(-2x\ \ )$
16. $(a^2b^5)(a^2b^5)$
17. $(5m^3)(3m^2n^4)$
18. $-3x^2 \cdot x^3$
19. y^{-8}
20. $(a^{-2})(b^3)$
21. $-6x^{-4}y^6$
22. $(-10x^4y^2)(3x^2y)$
23. $5m^{-3}$
24. 3^{-2}
25. $(5x)^3$
26. $(-3y)^3$
27. $(-2)^3$
28. $(-4mn)^2$
29. $5\,y^{-1}\,z^{-2}$
30. $(5^{-2})^2$

Zero and Negative Exponents

Simplify each expression: Write each with positive exponents.

1. a^{-4}
2. $\frac{1}{b^{-3}}$
3. $a^{-2}b$
4. $c^{-2}\,b^{-1}$
5. $c^{0}\,d^{4}$
6. $d^{0}c^{-4}$
7. $m^{8} \cdot m^{-5}$
8. $a^{-5} \cdot a^{3}$
9. $r^{3} \cdot r^{-2}$
10. $n^{-3} \cdot n^{-4}$
11. $x^{-9} \cdot x^{3} \cdot x^{2}$
12. $\frac{1}{t^{-5}\,t^{2}}$
13. $(2a^{-3})(5a^{4})$
14. $(-3p^{-5})(p^{2})$
15. $\frac{1}{b^{-8}\,b^{-1}}$
16. $(3d^{-4})(5d^{8})$
17. $s^{3} \cdot s^{-5} \cdot s^{7}$
18. $\frac{1}{x^{3}\,x^{-7}}$
19. $\frac{1}{m^{-3}\,m}$
20. $a^{-7} \cdot a^{9} \cdot a^{0}$
21. $5^{-6} \cdot 5^{4}$
22. $r^{7} \cdot s^{4} \cdot s^{-1} \cdot r^{3}$
23. $n^{-6} \cdot n^{-9}$

Integrated Algebra
Negative Exponents Practice

1. $m^8 \cdot m^{-5}$
2. $r^3 \cdot r^{-2}$
3. $a^{-5} \cdot a^3$
4. $x^{-4} \cdot x^{-7} \cdot x^5$
5. $n^{-3} \cdot n^{-4}$
6. $(2a^{-3})(5a^4)$
7. $(-3p^{-5})(2p^8)$
8. $s^3 \cdot s^{-5} \cdot s^7$
9. $\frac{1}{b^{-6}b^{-1}}$
10. $\frac{1}{x^3x^{-7}}$
11. $\frac{1}{y^{-5}y^8}$
12. $\frac{1}{m \ m^{-3}}$
13. $a^{-7} \cdot a^9$
14. $r^6 \cdot r^{-13}$
15. $5^{-6} \cdot 5^4$
16. $(d^2)^{-4}$
17. $(2^{-3})^4$
18. $(m^{-3}n^4)^{-4}$
19. $(y^6)^{-3} \cdot y^{21}$
20. $(b^2)^4 \cdot b^{-9}$
21. $(7b^{-1})^2$
22. $(y^3)^{-5} \cdot y^{20}$
23. $(n^{-2})^5 \cdot n^6$

Misc Review
Polynomials

1. $x^4 \cdot x^5$

2. $(-2x)^5$

3. $\frac{-3}{a^{-5}}$

4. $200^0 c^5$

5. $\frac{x^6}{x^4}$

6. $\frac{x^{-5}}{x^{-6}}$

7. $\left(\frac{-2m^2n}{3mn^2}\right)^4$

8. $x^4 \cdot \frac{1}{x^3}$

9. $(3a)^3 \cdot (-4a)^3$

10. $(8m^3)^2 \left(\frac{1}{2}m^2\right)^2$

11. $\frac{20x^3y}{4xy^2} \cdot \frac{-6xy}{-x}$

Algebra CC

Polynomials Practice

Simplify each expression.

1) $\frac{4x^3y^3}{2xy} \cdot \frac{5xy^3}{2y}$

2) $\frac{36a^8b^2}{ab} \cdot \frac{ab^2}{6}$

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

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

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

6) $\frac{3x^3y}{4x} \cdot \frac{12x^2y^2}{y^3}$

Exponent Rules

Name_____

Directions: Simplify the following expressions using the rules for working with exponents. When finished, find the letters matching your answers in the table, and decode the hidden message.

1. $x^2 \cdot x^7 =$
2. $\frac{x^6}{x^3} =$
3. $\frac{x^3}{x^5} =$
4. $\frac{2x^5}{x^{-2}} =$
5. $\left(x^3\right)^2 =$
6. $(2xy)^3 =$
7. $3\left(\frac{x}{y}\right)^2 =$
8. $3\left(\frac{x}{y}\right)^{-2} =$
9. $2x^3(2x)^0 =$
10. $\frac{10x^{-3}}{y^4} =$
11. $\left(x^7\right)^2 =$
12. $\frac{x^4}{x^2} =$
13. $\frac{x^0}{x^{-8}} =$
14. $x^2 \cdot x^3 =$
15. $2(xy)^3 =$
16. $\left(\frac{3x}{y}\right)^2 =$
17. $\frac{2x^5}{x} =$
18. $\left(\frac{3x}{y}\right)^{-2} =$
19. $\frac{10y^4}{x^{-3}} =$
20. $\frac{x^{-10}}{x^{-2}} =$

A: x^{14}	C: $2x^7$	D: $\frac{10}{x^3y^4}$	E: x^{-2}	F: $2x^3y^3$
H: x^2	I: $\frac{3x^2}{y^2}$	L: $2x^4$	M: $\frac{y^2}{9x^2}$	N: x^3
O: $8x^3y^3$	P: $10x^3y^4$	R: x^9	S: x^5	T: $\frac{3y^2}{x^2}$
U: x^{-8}	W: $\frac{9x^2}{y^2}$	X: x^8	Y: $2x^3$	!: x^6

15 6 17 17 8 16 9 6 20 1 10 1 3 11 18 14 !

3 13 4 3 19 8 15 6 1 8 12 3 5 2 3 16 12 3 1 3

9 6 20 11 1 3 7 2 18 11 8 12 4 17 11 14 14 7 2

9 6 20 1 20 2 10 3 1 16 3 11 1 5