

Algebra I

10.3 Worksheet #2

Negative and Zero Exponents

NAME: _____

DATE: _____ HOUR: _____

Find the hidden message. If the given expression is simplified correctly, choose the letter in column A. If it is not simplified correctly, choose the letter in column B.

	<u>TRUE</u>	<u>FALSE</u>		<u>TRUE</u>	<u>FALSE</u>
	A	B		A	B
1. $c^{-6}d^8 = \frac{d^8}{c^6}$	N	A	11. $\frac{x^{-1}}{x^{-1}} = 1$	T	C
2. $\frac{m^{-2}m^{-3}}{m^{-4}m^{-7}} = \frac{1}{m^6}$	S	O	12. $\frac{y^5}{y^{-5}} = 1$	D	H
3. $(2b^6)^0 = 2b^0$	Y	N	13. $(3j^{-0})^6 = 1$	W	I
4. $(3c^{-1})^2 = \frac{9}{c^2}$	E	W	14. $(2v^{-1})^{-3} = \frac{v^3}{8}$	N	H
5. $\frac{t^3}{t^{-4}} = t^7$	G	H	15. $8a^{-6} \cdot 9a^{-3} = \frac{72}{a^9}$	K	A
6. $(7v^{-3})^2 = \frac{49}{v^6}$	A	E	16. $\frac{12b^{-12}}{4b^{-3}} = \frac{3}{b^9}$	I	T
7. $(-2w^{-2})^2 = \frac{-4}{w^4}$	N	T	17. $-4c^8 \cdot 2c^{-9} = -8c$	W	N
8. $(3e^{-2})(2e^4) = 6e^2$	I	W	18. $\frac{k^9k^{-2}}{k^6k^{-8}} = k^9$	G	H
9. $\frac{8m^{13}}{2m^{-1}} = 4m^{12}$	H	V			
10. $(4f^{-6})(3f^4) = 12f^{-24}$	I	E			

19. What is the hidden message? _____

Evaluate.

1. $5 - 9$ _____ 2. $-2 - 4$ _____ 3. $-9 - (-9)$ _____ 4. $2 - (-4)$ _____

Evaluate each expression as a whole number or a fraction (no decimals).

- | | | |
|----------------------------------|--|-------------------------------------|
| 1. 4^{-2} _____ | 2. $(-3)^{-4}$ _____ | 3. $(-2)^3$ _____ |
| 4. $\frac{7^{13}}{7^{15}}$ _____ | 5. 5^{-3} _____ | 6. $\frac{1^{15}}{1^{23}}$ _____ |
| 7. $-(-2)^3$ _____ | 8. $\frac{10^8}{10^{12}}$ _____ | 9. $(-8)^2$ _____ |
| 10. $\frac{15}{15^2}$ _____ | 11. 6^{-2} _____ | 12. $\frac{13^{-4}}{13^{-3}}$ _____ |
| 13. 12^{7-7} _____ | 14. $\left(\frac{34^8}{34^3}\right)^0$ _____ | 15. $\frac{12^3}{12^1}$ _____ |

Write each of the following without negative or zero exponents.

- | | | |
|-----------------------------------|---------------------------------|-----------------------------------|
| 16. x^{-3} _____ | 17. p^{-5} _____ | 18. w^{t-t} _____ |
| 19. $(mn)^0$ _____ | 20. $5w^{-2}$ _____ | 21. $13f^0$ _____ |
| 22. $8b^{-12}$ _____ | 23. 12^0 _____ | 24. c^{-6} _____ |
| 25. $\frac{y^{-5}}{2}$ _____ | 26. $5k^{-7}$ _____ | 27. $(5k)^{-7}$ _____ |
| 28. $14cd^{-2}$ _____ | 29. $\frac{p^0}{q}$ _____ | 30. d^5w^{-6} _____ |
| 31. $a^{-4}b^0$ _____ | 32. $x^{-1}y^{-5}$ _____ | 33. $\frac{x^3y^{-2}}{z}$ _____ |
| 34. a^0 _____ | 35. $y^{-3}x^4z^2$ _____ | 36. $(a^c b^2)^0$ _____ |
| 37. $\frac{a^{-3}}{a^{-1}}$ _____ | 38. $a^0 b^4$ _____ | 39. $\frac{a^5}{a^{-3}}$ _____ |
| 40. $\frac{(ab)^2}{a^{-4}}$ _____ | 41. $\frac{a^{-2}c^2}{b}$ _____ | 42. $(abc)^{-2}$ _____ |
| 43. $ab^{-2}c^3$ _____ | 44. $b^{-3}a^2$ _____ | 45. $\frac{ab}{a^{-1}b^2c}$ _____ |

Write each of the following without negative or zero exponents.

- | | | |
|----------------------------------|--------------------------------|--|
| 1. $(u^{-8}v^2)^0$ _____ | 2. m^3n^{-4} _____ | 3. $-3b^2c^{-3}$ _____ |
| 4. $\frac{-9q^{-8}}{3w}$ _____ | 5. $(2p^2q^{-7})^{-4}$ _____ | 6. $\frac{xyz}{x^{-1}z^{-5}}$ _____ |
| 7. $\frac{10h^0}{2h^{-7}}$ _____ | 8. $(x^{-6}y^{-2})^{-2}$ _____ | 9. $\frac{8^0}{(gh^2)^0}$ _____ |
| 10. $(-3v^{-5})^{-3}$ _____ | 11. $-13q^{-7}w^5$ _____ | 12. $w^{-4}w^5$ _____ |
| 13. $\frac{3y^{-12}}{z}$ _____ | 14. $(-2m^{-2})^{-3}$ _____ | 15. $\frac{12p^{-11}}{4p^{-11}}$ _____ |