

*** Copy the problems, show all work, and write all answers on notebook paper. ***

EXPONENTS:

Write each product using an exponent.

1. $5 \times 5 \times 5 \times 5 \times 5 \times 5$ 5^6 2. $12 \times 12 \times 12$ 12^3 3. $9 \times 9 \times 9 \times 9$ 9^4 4. 7×7 7^2

Write each power as a product of the same factor. Then find the value. SHOW ALL STEPS!

5. 9^4 $9 \times 9 \times 9 \times 9$ (6561) 6. 2^5 $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$ (32) 7. $4^0 = 1$ 8. $6^1 = 6$ 9. 0.5^3 (0.125)

ORDER OF OPERATIONS:

Find the value of each expression. SHOW ALL STEPS!

10. $22 - 17 + 8$ (13) 11. $6 \times (9 + 2) - 5$ (61) 12. $55 \div (5 + 6) + 7 \times (2 + 14)$ (117)
 13. $26 + 6^2 \div 4$ (35) 14. $12 \div 4 + (5^2 - 6)$ (22) 15. $(8 - 6)^4 + 10 \times 9$ (106)

*anything to the zero power = 1

*anything to the first power is that #

P
E
M
D
A
S

ALGEBRAIC EXPRESSIONS:

Evaluate each expression for the given values of the variables. SHOW ALL STEPS!

16. $24 \div a$ if $a = 6$ $24 \div 6 = 4$ 17. $2b - 10$ if $b = 13$ (16) 18. $c^2 + c$ if $c = 8$ (72) 19. $5d^3$ if $d = 4$ (320)

Evaluate each expression if $w = 6$, $x = 8$, and $y = 12$. SHOW ALL STEPS!

20. $2w + 4x$ (44) 21. $3y^2 + 5w$ (462) 22. $y \div 3 + wx$ (52)

Define a variable. Then write each phrase as an algebraic expression.

23. 3 miles less than Ray $(R - 3)$ 24. renting a video game and paying a \$2 late fee $v + 2$ 25. the length of a painting that is 4 times the width $L = 4 \cdot w$
 26. buying 5 books and a \$2.50 magazine $(5b + 2.50)$ 27. half as much money as her brother spent $m \div 2$ 28. 8 more than 2 times her daughter's age $2a + 8$

DISTRIBUTIVE PROPERTY:

Use the distributive property to rewrite each expression.

29. $4(x + 3)$ $4x + 12$ 30. $8(5 + y)$ $40 + 8y$ 31. $3(7m - 6)$ $21m - 18$ 32. $7(9 + 2k)$ $63 + 14k$

Rewrite each expression by factoring out the GCF.

33. $6v - 30$ $6(v - 5)$ 34. $28 + 4d$ $4(7 + d)$ 35. $48 - 36p$ $12(4 - 3p)$ 36. $9e + 15$ $3(3e + 5)$

* Pull out the GCF!

