Writing Expressions Using Exponents

Name: _____ Date: _____

Instructions: Convert repeated multiplication to exponential form, or expand exponential expressions into repeated multiplication.

Part A: Write in Exponential Form

1. $5 \times 5 \times 5 \times 5 =$ _____
2. $2 \times 2 \times 2 \times 2 \times 2 \times 2 =$ _____
3. $9 \times 9 \times 9 =$ _____
4. $7 \times 7 \times 7 \times 7 \times 7 =$ _____
5. $10 \times 10 \times 10 \times 10 =$ _____
6. $3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 =$ _____

Part B: Write as Repeated Multiplication

7. $6^3 =$ _____
8. $4^5 =$ _____
9. $8^2 =$ _____
10. $2^7 =$ _____
11. $11^4 =$ _____
12. $5^6 =$ _____

Part C: Identify the Base and Exponent

13. In 7^4, the base is _____ and the exponent is _____
14. In 12^3, the base is _____ and the exponent is _____
15. In 9^5, the base is _____ and the exponent is _____

Part D: Challenge Questions

16. Write an expression using exponents that has a base of 4 and uses 4 as a factor 5 times: _____

17. How many times is 8 used as a factor in 8^6? _____