

Introduction to Powers and Exponents

Name: _____

Date: _____

Remember: In the expression 5^3 , the **base** is 5 and the **exponent** is 3. This means $5 \times 5 \times 5$.

Part A: Identify the Base and Exponent

For each expression, write the base and the exponent.

- | | | |
|-----------|-------------|-----------------|
| 1. 7^2 | Base: _____ | Exponent: _____ |
| 2. 10^4 | Base: _____ | Exponent: _____ |
| 3. 3^5 | Base: _____ | Exponent: _____ |
| 4. 2^6 | Base: _____ | Exponent: _____ |
| 5. 9^3 | Base: _____ | Exponent: _____ |

Part B: Write in Exponential Form

Write each multiplication in exponential form (e.g., $4 \times 4 \times 4 = 4^3$).

- $6 \times 6 =$ _____
- $5 \times 5 \times 5 \times 5 =$ _____
- $2 \times 2 \times 2 =$ _____
- $10 \times 10 \times 10 \times 10 \times 10 =$ _____
- $8 \times 8 \times 8 =$ _____

Part C: Calculate the Value

Work out the value of each expression.

- $2^3 =$ _____
- $5^2 =$ _____
- $10^3 =$ _____
- $4^2 =$ _____
- $3^4 =$ _____

Part D: Challenge Questions

- Which is greater: 2^5 or 5^2 ? _____

17. Write 81 as a power with base 3: _____

18. If $7^n = 49$, what is the value of n ? _____