

Name: _____

Date _____

Identify Equivalent Expressions Involving Exponents



Instruction:

Use the laws of exponents to simplify and compare expressions.

Example:

$$3^2 \times 3^3 = 3^{2+3} = 3^5$$

$$8^2 \div 8^1 = 8^{2-1} = 8^1$$

1. Fill in the Blanks:

- 1) $5^2 \times 5^6 = 5^-$
- 2) $4^2 \div 4^7 = 4^-$
- 3) $6^2 \times 6^3 = 6^-$
- 4) $7^2 \times 7^2 = 7^-$
- 5) $8^2 \div 8^1 = 8^-$

2. Complete the Sentences:

- 1) $a^m \times a^n = a^-$
- 2) $b^p \times b^q = b^-$
- 3) When exponents are multiplied with the same base, we ____ the powers.
- 4) x^0 (for any non-zero x)
- 5) $6 \times 6 \times 6$ can be written as ____

3. True or False:

Tick **True** or **False** for each:

- 1) $5^2 \times 5^6 = 5^8 \rightarrow$ True / False
- 2) $6^2 \times 6^6 = 6^8 \rightarrow$ True / False
- 3) $4^7 \div 4^5 = 4^8 \rightarrow$ True / False
- 4) $3^2 \times 3^3 = 3^8 \rightarrow$ True / False
- 5) $2^2 \div 2^2 = 2^8 \rightarrow$ True / False

4. Match the Expression to the answer:

Column A

- A. $2^2 \times 2^3$
- B. $5^4 \div 5$
- C. 10^0
- D. $7^2 \times 7^1$
- E. 4×4

Column B

- 1. 4^2
- 2. 5^3
- 3. 1
- 4. 2^5
- 5. 7^3