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Questions

1. Consider the expression x^0 for any non-zero number x . What is the value of this expression and why?

- A. It equals x because x is unaffected by exponent 0.
- B. It equals x^1 because exponents of 0 are ignored.
- C. It equals 1 because any non-zero number to the power of 0 is defined as 1.
- D. It equals 0 because any number to the power of 0 is 0.

2. In arithmetic division, what is the result when any number is divided by 1?

- A. The result is 0.
- B. 1 is always the divisor.
- C. The result is the original number.
- D. 1 can only be the dividend.

3. In binary logic systems, which logical operator typically results in a '1' when any of its inputs is '1'?

- A. NOT operator
- B. OR operator
- C. XOR operator
- D. AND operator

4. In number theory, what role does 1 play in factorization?

- A. It is a factor of even numbers only.
- B. It is not a factor of any number.
- C. It is a factor of every integer.
- D. It is only a factor of prime numbers.

5. Relating to computer architecture, what does it mean if a bit has a value of 1?

- A. The bit is set to an 'on' state.
- B. The bit value is indeterminate.
- C. The bit is set to an 'off' state.
- D. The bit value is used as a placeholder.