Day 5

Historical figure

Turn to someone sitting near you. Take about 3 minutes to discuss:

If you could meet any historical figure, who would you choose and why?

Groups

1. On the set of integers, consider the binary operation of exponentiation. This operation is...

(A) Both associative and commutative.

(B) Associative, but not commutative.

(C) Commutative, but not associative.

(D) Neither associative nor commutative.

Recall: A *left identity* for a binary operation on a set S is an element e such that $es = s$ for all $s \in S$. A *right identity* is an element e such that $se = s$ for all $s \in S$.

2. On the set of integers, consider the binary operation of exponentiation. This operation has...

(A) both a left identity and a right identity.

(B) a left identity, but no right identity.

(C) a right identity, but no left identity.

(D) neither a right identity nor a left identity.

3. Consider the set $\{1, 2, 3\}$ equipped with the binary operation of multiplication modulo 4. This set is not a group because...

(A) The set is not closed under the given operation.

(B) The operation is not associative.

(C) There is no identity element.

(D) Not every element has an inverse.