Day 7

Invertible matrix of order 4

Turn to your neighbor. Spend about 3 minutes working together to find an example of an invertible matrix A in $\mathrm{GL}(2, \mathbb{R})$ that has order 4 (ie, such that A^3 *isn't* the identity matrix, but A^4 is).

Order

1. What is the order of $U(10)$?

(A) 4

(B) 5

(C) 9

(D) None of the above

2. What is the order of 3 in $U(10)$?

(A) 2

(B) 3

(C) 4

(D) None of the above

3. Let G be the group of symmetries of the circle and let R be rotation by 7 degrees. What is the order of R?

(A) 7

(B) 51

(C) 360

(D) None of the above

4. “$\begin{bmatrix} 1 & 1 \\ 0 & 1 \end{bmatrix}$ is an element of $\mathrm{SL}(2, \mathbb{R})$ of infinite order.”

This statement is...

(A) True.

(B) False.