

Problem 3 (20 points). Here are four different representations of a certain number:

Somali language (Latin script)	toddoba iyo sagaashan
Somali language (Osmanya script)	ጥከፀፀከሣ ፬፻፳፻፳
Osmanya numerals	፱፭
Arabic numerals	97

Below are ten arithmetic equalities written using the four types of systems shown above with some parts left blank. All the numbers that appear in the equalities are integers.

- [1] $፩፻፵፱፻፳ + ፭ = ፻፵$
- [2] $፫ \times \text{siddeed boqol} = ፶፻፵፬$
- [3] $፻፻ \times \text{፻፳፻ ፬፻፳ ጥከሣ፻፳} = ፻፻፻$
- [4] $\text{፻፳፻} + \text{sagaal iyo sagaashan} = \text{boqol}$
- [5] $፻፻ \times ፻፫፻፳፻፳ = ፫ \times \boxed{\text{A}}$
- [6] $\text{፻} \times \boxed{\text{B}} = ፻፫፻ ፬፻፳ ፻፳፻፳፻፳$
- [7] $፻፫፻ ፶፻፳፻፳ ፬፻፳ ፻፳፻ ፩፻፵፱፻፳፻ \times ፲፻፳ = \text{rug}$
- [8] $፩፻፳፻፳ \times \boxed{\text{C}} = \text{፶፻፳፻፳} + \text{koob iyo toddobaatan}$
- [9] $፩፻፵፱፻፳ ፶፻፳፻፳ ፬፻፳ ፳፻፻፵፻፳ = ፻፻፱ + \text{lix boqol iyo koow}$
- [10] $\text{፳፻፶፻ ፻፳፻ ፻፳፻ ፬፻፳ ፳፻፶፻፻፳፻} = 2021 = \boxed{\text{D}}$

(a) Fill the blanks (A–D) in Osmanya numerals.

(b) Write the equalities [1–9] in Arabic numerals.

(c) Write in Somali (Latin script):

E. 401

F. ፫፵፻፳

G. ፻፳፻ ፬፻፳ ፶፻፳፻፳ ፬፻፳ ፩፻፵፱፻፳

(d) Write in Somali (Osmanya script):

H. 71

I. ፱፻፶

J. saddex iyo afartan

(!) No additional explanation besides the answers is required, nor will be marked.

△ Somali belongs to the Cushitic branch of the Afro-Asiatic family. It is spoken by approx. 1,600,000 people in East Africa, mainly in Somalia and Djibouti.

The Osmanya script is a writing system that was created between 1920 and 1922 to transcribe the Somali language. In 1961, it was recognized as one of the official scripts by the Somali government. Nowadays, it is mostly substituted by the Latin script. —Minkyu Kim