

Problem 2 (25 marks)

Below you see arithmetic equalities written in Egyptian Arabic¹. All summands, as well as all sums except the last one, are represented as fractions in which neither the numerators nor the denominators are greater than 10, nor is any denominator equal to 1:

$$\frac{tum}{n} + \frac{tum}{n\bar{e}} = \frac{talatt}{itm\bar{a}n} \quad (1)$$

$$\frac{saba\varsigma}{itl\bar{a}t} + \frac{suds}{s} = \frac{\varsigma a\check{s}art}{irb\bar{a}\varsigma} \quad (2)$$

$$\frac{tus\varsigma\bar{e}n}{s} + \frac{tus}{\varsigma} = \frac{suds\bar{e}n}{s} \quad (3)$$

$$\frac{xamast}{i\check{m}\bar{a}s} + \frac{sub}{\varsigma} = \frac{tamant}{isb\bar{a}\varsigma} \quad (4)$$

$$\frac{sub\varsigma\bar{e}n}{xums\bar{e}n} = \frac{24}{35} \quad (5)$$

Assignment 1. Write these equalities in figures.

Assignment 2. The equality $\frac{rub}{\varsigma} + \frac{\varsigma a\check{s}art}{its\bar{a}\varsigma} = \frac{saba\varsigma}{isd\bar{a}s}$ is missing a sign. Which one?

Note: The letter \check{s} is pronounced as English *sh*, x as the *ch* in *loch*; ς is a specific Arabic consonant. A bar above a vowel indicates length. (Ivan Derzhanski)

Problem 3 (15 marks)

Consider the following expressions in Basque² and their unordered English translations (some words have been left out):

<i>urtarrilaren hogeita hirugarrena, larunbata;</i>	<i>abenduaren azken astea;</i>
<i>otsailaren lehenengo osteguna;</i>	<i>ekainaren bederatzigarrena, igandea;</i>
<i>abenduaren lehena, _____;</i>	<i>irailaren azken asteazkena;</i>
<i>azaroaren hirugarren ostirala;</i>	<i>urriaren azken larunbata;</i>
<i>irailaren lehena, astelehena;</i>	<i>_____ bigarrena, ostirala.</i>

the first Thursday of February; the last Wednesday of _____; the first of December, Wednesday; the last _____ of December; the ninth of June, Sunday; the twenty-third of January, _____; the last Saturday of October; the third Friday of November; _____ of September, Monday; the second of January, Friday.

Assignment 1. Match up the expressions with their translations and fill in the gaps.

Assignment 2. Translate into Basque:

the first Monday of December; the twenty-ninth of November, Saturday; the second week of January; the third of February, Monday.

Assignment 3. How do you think the Basque names of days of the week *astelehena*, *asteazkena*, *asteartea* might be translated literally? (Alexandre Arkhipov)

¹The Egyptian dialect of the Arabic language is spoken by about 45 million people. Thanks to Egypt's considerable economic, political and cultural influence and most of all to the great quantity and popularity of its radio and television programmes, this dialect is also widely understood by speakers of other Arabic dialects.

²Basque is spoken by more than 500 thousand people in Basque Country (an autonomous province of Spain) and in France. It has not been proven to be related to any other language.