

2009 Solutions

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L1. (16/25 points: two points for each correct match except for the blank)

1 2 3 4 5 6 7 8 9
D E H B C A G F _

Intermediate data:

- A. Kuvia 8-2=6
- B. Albanian 10-6=4
- C. Farsi 8-3=5
- D. Irish 6-5=1
- E. Nepali 6-4=2
- F. Yiddish 9-1=8
- G. Pengo 10-3=7
- H. Lithuanian 8-5=3

$$(5 \times 4) + (9 \times 8) = (5 \times 10) + (6 \times 7)$$

L2. (9/25 points)

Sample "key insights"

- closer connections among neighboring languages
- consonants more likely to be preserved
- pronunciation may not match spelling
- specific phonological changes, e.g., s-sh, c-p,
- specific patterns for numerals, e.g., 9 starts with N, 4 has T+R in the middle
- use of the title of the problem
- use of the equation
- use of the constraints imposed by the subtractions
- the form for the number 1 changes the most

