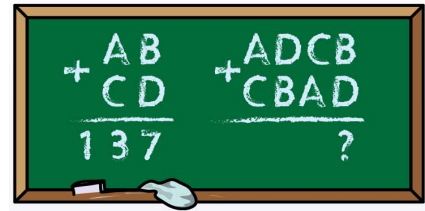


- 1) Alexey correctly added two two-digit numbers on the left side of the board and received an answer of 137 (see figure). What answer will he get if he add the two four-digit numbers on the right side of the board?



Source: [1], 2021, grade 7-8, #7

- 2) Solve the following cryptogram, where every symbol corresponds to a digit.

$$\begin{array}{r} AA \\ + BB \\ CC \\ \hline ABC \end{array}$$

Source: [2], 2003, 9-10, #25

- 3) Find the sum of digits $A + B + C + D + E$, if
- $$\begin{array}{r} 2ABCDE \\ \times \quad 3 \\ \hline ABCDE2 \end{array}$$

Source: [1], 2021, grade 7-8, #23

Remark. Solve using a linear equation or find every digit separately.

- 4) Find all numbers that are 5 times larger than their last digit.

Source: [3], #87981

- 5) Find all numbers which are 2 times larger than the sum of their digits

Source: [3], #103744

- 6) A natural number is 14 times bigger than a number which we get after removing the last digit of the initial number. How many numbers have this property?

Source: [1], 2017, grades 7-8, #19

- 7) The sum of the digits of the seven-digit number $\overline{aaabbbb}$ is equal to \overline{ab} . Find $a + b$?

Source: [1], 2019, grade 9-10, #18

- 8) Marta multiplied two two-digit numbers. Then she removed 3 digits (see the picture). Find the sum of those 3 digits.

Source: [1], 2018, grades 7-8, #11

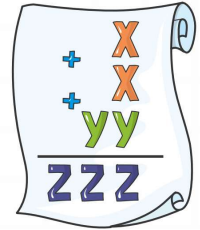
- 9) Solve the following cryptogram, where every symbol corresponds to a digit. Note that $G < 6$.

$$\begin{array}{r} K A N \\ + K A G \\ + K N G \\ \hline 2 0 0 6 \end{array}$$

Source: [2], 2006, grade 9-10, #16

10) Solve the following cryptogram, where every symbol corresponds to a digit.

Source: [1], 2015, grade 5-6, #21



Bibliography

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<http://kangaroo.com.ua>

[2] Archive of problem sets from Austrian Kangaroo (2002 - 2022):
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