1. Real Numbers

Task 1.01. (0-1)   (2015 - task 07)

Let us assume that $\frac{15}{16}$ is approximately equal to 0.9. The approximation error expressed as a percentage will be equal to

   A.   4%   B.   0.04%   C.   3%   D.   0.03%

Task 1.02. (0-1)   (2016 - task 01)

The following table shows the number of votes received by each candidate in a by-election.

Candidate	I	II
Number of votes	13970	17780

The number of votes received by the winner was higher than the number of votes received by the other candidate by:

A.   56 percentage points.   **B.**   44 percentage points.
C.   27 percentage points.   **D.**   12 percentage points.

Task 1.03. (0-1)   (2016 - task 02)

If $\log a = \frac{1}{2}$ and $\log b = \frac{2}{5}$, where $a > 0$ and $b > 0$, then the value of the expression $\log(a^2 b)$ equals

   A. $\frac{7}{5}$ B. $\frac{4}{10}$ C. $\frac{13}{20}$ D. $\frac{1}{10}$

Task 1.04. (0-1)   (2016 - task 03)

The number $4(4^{18} + 4^{17})$ equals

   A. 4^{35} B. 4^{36} C. 5×4^{17} D. 5×4^{18}

Task 1.05. (0-1)   (2017 - task 01)

It may be assumed that 0.3 is an approximation of $\frac{5}{16}$. What is the percentage error of this approximation?

   A.   2.5%   B.   0.025%   C.   4%   D.   0.04%

1. Real Numbers

Task 1.06. (0-1)   (2017 - task 02)

Among those listed below, the only positive number is:

  A. $(-3)^0$ B. -3^0 **C.** $(-3)^{2017}$ **D.** -3^{2017}

Task 1.07. (0-1)   (2018 - task 10)

In February, the price of a certain product remained constant, but on March 1st it was increased by 10%. After a week, the new price was decreased by 20%. As a result of these two changes, the initial price of the product was decreased by

  A. 12%   B.   14%   C. 9%   D.   4%

Task 1.08. (0-1)   (2019 - task 01)

If we assume that $\frac{8}{9}$ is approximately equal to 0.9/ the percentage error of this approximation is equal to:

  A. 1%   B.   1.25%   C.   0.0125%   D.   0.01%

Task 1.09. (0-1)   (2020 - task 01)

The reciprocal of $3\frac{2}{9} - 5\frac{1}{3} \times \sqrt{\frac{49}{144}}$ is:

  A. -9 B. $-\frac{1}{9}$ C. $\frac{1}{9}$ D. 9

Task 1.10. (0-1)   (2020 - task 05)

The number $\frac{4^8 + 4^7}{320 \times 4^4}$ is equal to:

  A. 4^{-1} B. 4^0 C. 4^1 D. 4^2

1. Real Numbers

Task 1.11. (0-1)　　　(2020 - task 06)

If $\log_3 5 = 0.68$ then $\log_3 45$ equals:

  A. 1.32　　　　B. 1.36　　　　C. 2.68　　　　D. 6.8

Task 1.12. (0-1)　　　(2021 - task 02)

The Seine is shorter than the Vistula by 25%, and the Rhine is longer than the Vistula by 17%. Thus the Rhine is longer than the Seine by

  A. 64%　　　　**B.** 56%　　　　**C.** 42%　　　　**D.** 21%

Task 1.13. (0-4)　　　(2021- task 18)

Write down each of the sentences a–d below as an algebraic expression.

a) The difference of a squared and b.

....

b) The absolute value of the sum of b and tripled a.

....

c) The quotient of a squared and the third power of b.

....

d) The product of a increased by 5 and the square root of b.

....