

Mathematic Sample Questions for Grade Division 4 (Grade 11 and 12) in ENGLISH

Q-1 It is known that $\operatorname{tg} A + \operatorname{tg} B = 2$ and $\operatorname{ctg} A + \operatorname{ctg} B = 3$. Find $\operatorname{tg} (A + B)$.

- A $2/3$
- B $1/6$
- C $3/2$
- D 6

Q-2 What is the largest value that can be taken by the expression $\frac{1}{a + \frac{2010}{b + \frac{1}{c}}}$ where a, b, c are pairwise distinct non-zero digits?

- A $\frac{19}{4039}$
- B $\frac{1}{203}$
- C $\frac{19}{203}$
- D $\frac{1}{19}$

Q-3 A sequence of two different numbers was continued in two ways: to form a geometric progression, and to form an arithmetic progression. In this case, the third member of the geometric progression coincided with the tenth member of the arithmetic progression. And with which member of the arithmetic progression did the fourth member of the geometric progression coincide?

- A a_{30}
- B a_{45}
- C a_{74}
- D a_{82}

Q-4 Find $\min |3 + 2i - z|$ for $|z| \leq 1$

- A $\sqrt{3} - 2$
- B $\sqrt{3} - 1$
- C $\sqrt{3} - 3$
- D $\sqrt{3}$

Q-5 There are 100 ministers in the Anchuria cabinet. Among them there are swindlers and honest ministers. It is known that out of any ten ministers, at least one minister is a swindler. What is the smallest number of swindler ministers that can be in the cabinet?

- A** 9
- B** 10
- C** 90
- D** 100