

1. Решите тригонометрическое неравенство $\operatorname{tg}^2 x + 3\operatorname{tg} x - 4 \geq 0$.

- 1) $\bigcup_{k \in \mathbb{Z}} \left[\frac{\pi}{4} + 2\pi k; \frac{\pi}{2} + 2\pi k \right) \cup \left[-\frac{\pi}{2} + 2\pi k; -\operatorname{arctg} 4 + 2\pi k \right]$
- 2) $\bigcup_{k \in \mathbb{Z}} \left[\frac{\pi}{4} + \pi k; \frac{\pi}{2} + 2\pi k \right) \cup \left(-\frac{\pi}{2} + 2\pi k; -\operatorname{arctg} 4 + \pi k \right]$
- 3) $\bigcup_{k \in \mathbb{Z}} \left[\frac{\pi}{4} + \pi k; \frac{\pi}{2} + \pi k \right) \cup \left(-\frac{\pi}{2} + \pi k; -\operatorname{arctg} 4 + \pi k \right]$
- 4) $\bigcup_{k \in \mathbb{Z}} \left[\frac{\pi}{4} + \pi k; \frac{\pi}{2} + \pi k \right) \cup \left[-\frac{\pi}{2} + \pi k; -\operatorname{arctg} 4 + \pi k \right]$
- 5) $\bigcup_{k \in \mathbb{Z}} \left[\frac{\pi}{4} + \pi k; \frac{\pi}{2} + \pi k \right) \cup \left(-\frac{\pi}{2} + \pi k; -\operatorname{arctg} 4 + \pi k \right)$
- 6) $\bigcup_{k \in \mathbb{Z}} \left[\frac{\pi}{4} + \pi k; \frac{\pi}{2} + \pi k \right) \cup \left[-\frac{\pi}{2} + \pi k; -\operatorname{arctg} 4 + \pi k \right)$

2. Решите тригонометрическое неравенство $\operatorname{ctg}^2 x - 5\operatorname{ctg} x + 4 \leq 0$.

- 1) $\bigcup_{k \in \mathbb{Z}} \left(\operatorname{arccctg} 4 + \pi k; \frac{\pi}{4} + \pi k \right]$
- 2) $\bigcup_{k \in \mathbb{Z}} \left[\operatorname{arccctg} 4 + \pi k; \frac{\pi}{4} + \pi k \right]$
- 3) $\bigcup_{k \in \mathbb{Z}} \left[\operatorname{arccctg} 4 + \pi k; \frac{\pi}{4} + \pi k \right)$
- 4) $\bigcup_{k \in \mathbb{Z}} \left[\operatorname{arccctg} 4 + 2\pi k; \frac{\pi}{4} + 2\pi k \right]$
- 5) $\bigcup_{k \in \mathbb{Z}} \left(\operatorname{arccctg} 4 + \pi k; \frac{\pi}{4} + \pi k \right)$
- 6) $\bigcup_{k \in \mathbb{Z}} \left[\operatorname{arccctg} 4 + 4\pi k; \frac{\pi}{4} + 4\pi k \right]$