

1. Find the integral solution of the inequality $5x - 1 < (x + 1)^2 < 7x - 3$.
 (1) 2 (2) 3
 (3) 4 (4) 5
2. $(x - 2)^4(x - 3)^3(x - 4)^2(1 - x) \leq 0$
 (1) (1, 3) (2) $(-\infty, 1) \cup (3, \infty)$
 (3) $(-\infty, 1] \cup [3, \infty)$ (4) [1, 3]
3. Complete solution set of inequalities $1 \leq \frac{x+1}{2x-1} < 2$ is
 (1) (1, 2) (2) [1, 2)
 (3) (1, 2] (4) [1, 2]
4. The negative integral value of x satisfying $\frac{1}{x-2} - \frac{1}{x} \leq \frac{2}{x+2}$ is
5. The number of positive integral solutions of $\frac{x^2(3x-4)^3(x-2)^4}{(x-5)^5(2x-7)^6} \leq 0$ is
 (1) 4 (2) 3
 (3) 2 (4) 1
6. The value of $7\log\left(\frac{16}{15}\right) + 5\log\left(\frac{25}{24}\right) + 3\log\left(\frac{81}{80}\right)$ is equal to
 (1) $\log 2$ (2) 3
 (3) 5 (4) 7
7. Solve $25^{\log_{10} x} = 5 + 4x^{\log_{10} 5}$.
 (1) 5 (2) 100
 (3) 20 (4) 10
8. If $a = \log_{24} 12$, $b = \log_{36} 24$, $c = \log_{48} 36$ then $abc + 1$ equals
 (1) $2ac$ (2) $2bc$
 (3) $2ab$ (4) None of these
9. The solution set of the equation $\log_x 2 \log_{2x} 2 = \log_{4x} 2$ is
 (1) $\{2^{-\sqrt{2}}, 2^{+\sqrt{2}}\}$ (2) $\{\frac{1}{2}, 2\}$
 (3) $\{\frac{1}{4}, 2^2\}$ (4) None of these
10. The number of real solutions of the equation $\log_{10} (7x - 9)^2 + \log_{10} (3x - 4)^2 = 2$ is
 (1) 1 (2) 2
 (3) 3 (4) 4