

- Find the integral solution of the inequality  $5x - 1 < (x + 1)^2 < 7x - 3$ .  
 (1) 2 (2) 3  
 (3) 4 (4) 5
- $(x - 2)^4(x - 3)^3(x - 4)^2(1 - x) \leq 0$   
 (1) (1, 3) (2)  $(-\infty, 1) \cup (3, \infty)$   
 (3)  $(-\infty, 1] \cup [3, \infty)$  (4) [1, 3]
- 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]
- The negative integral value of  $x$  satisfying  $\frac{1}{x-2} - \frac{1}{x} \leq \frac{2}{x+2}$  is
- 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
- 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
- Solve  $25^{\log_{10} x} = 5 + 4x^{\log_{10} 5}$ .  
 (1) 5 (2) 100  
 (3) 20 (4) 10
- 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
- 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
- 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