

24. Solve the system: 
$$\begin{cases} \log_3(x+y) = 2 \\ \log_{(3x-y)} x = 1 \end{cases}$$

- (A) (3,6) (B) (3,9) (C) (2,4) (D)  $\emptyset$  (E) NOTA

25. Find the sum of all real values of  $x$  such that  $(x^2 - 5x + 5)^{(x^2 - 3x + 2)} = 1$ .

- (A) 6 (B) 7 (C) 9 (D) 10 (E) NOTA

26. Given:  $y$  varies directly as  $A$  and inversely as  $B$  to the  $C$  power

If both  $A$  and  $B$  are doubled and  $C$  is increased by 1, by what is  $y$  multiplied?

- (A)  $\frac{2}{B(2^C)}$  (B)  $\frac{1}{B(2^C)}$  (C)  $\frac{2A}{B(2^C)}$  (D)  $\frac{A}{B(2^C)}$  (E) NOTA

27. Solve over {Real Numbers}:  $\log_2 x - \log_2 \left( \frac{1}{x} \right) - \log_{\left( \frac{1}{2} \right)} x = 9$

- (A) 4 (B) 8 (C)  $\frac{1}{512}$  (D) 512 (E) NOTA

28. Find the third term in the expansion of  $(x + 2)^{\frac{4}{3}}$ .

- (A)  $-\frac{2}{9}x^{-\frac{2}{3}}$  (B)  $-\frac{8}{9}x^{-\frac{2}{3}}$  (C)  $\frac{2}{9}x^{-\frac{2}{3}}$  (D)  $\frac{8}{9}x^{-\frac{2}{3}}$  (E) NOTA

29. Given:  $(a + b + c)^{-1}(a^{-1} + b^{-1} + c^{-1})(ab + ac + bc)^{-1}[(ab)^{-1} + (bc)^{-1} + (ac)^{-1}] = \frac{9}{16}$   
 $a, b, c > 0$

Find the product  $abc$ .

- (A)  $\frac{4}{3}$  (B)  $\frac{3}{4}$  (C)  $\frac{16}{9}$  (D)  $\frac{9}{16}$  (E) NOTA

30. Solve for all real values of  $x$ :  $\log x \geq \log 2 + \frac{1}{2} \log x$