

1. Indices

1. Evaluate the value of x in $81^{x+1} + 3^{4x} = 246$.
2. Solve for y in the equation:-
 $5^{(2y+1)} = 4(5)^{y+1} - 15$
3. Without logarithm tables or calculators, evaluate: $\frac{25^{3/4} \times 0.9^2 \times 2^2}{5^{5/2} \times 3^3}$ in the form A/B where A and B are integers
4. Find the value of x given that :
 $2^x = 0.0625$ (x is an integer)
6. Find the value of x which satisfies the equation $16^{x^2} = 8^{4x-3}$
7. Solve the equation;
 $9^{x+1} + 3^{2x+1} = 36$
8. By letting $P = 4^{-y}$ in the equation:
 $4^{-2y+1} - 3 \times 4^{-y} - 10 = 0$
(a) Write the above equation in terms of P
(b) Hence find the possible values of y
9. Solve for x in the equation.
10. In the expansion of $\left(\frac{1}{x} - \frac{1}{x^2} \right)^6$ the constant term is 4860. Find the value of a