

HOLIDAY PACKAGES S2

1. Find the value of $\frac{x}{y}$ if $4^x - 256^y = 0$. **(3marks)**

2. Evaluate without using calculator. **(3marks)**

$$6(225^2 - 25^2).$$

3. Solve the simultaneous equations. **(4marks)**

$$\begin{cases} y - x = 4 \\ 2y + x = 5 \end{cases}$$

4. Given that $235_x = 95_{ten}$, find the value of x . **(4marks)**

5. Solve for x in the equation. **(4marks)**

$$\frac{x}{3} - \frac{3x - 7}{5} = \frac{x - 2}{6}$$

6. Simplify without using calculator. **(9marks)**

a) $2 \frac{1}{2} \div \frac{4\frac{1}{3} - 2\frac{1}{4}}{4\frac{1}{6}}$

b) $\frac{8^{n+2} \times 2^{2n-2}}{2^n \times 4^{\frac{n}{2}}}$

c) $\frac{x^3 + x^2 - 4x - 4}{x^2 - 4}$.

7. Carry out the following . (show all working ways):

a) $115 + 251 + 251$

b) $53412 - 34125$

(6marks)

8. A sum of money is invested at Simple interest and it amounts to 420FRW at the end of the first year and 441FRW at the end of the second year. **(6marks)**

Determine: a) The rate in the percentage b) The sum of money invested

9. If $p(x) = x(2x + 1)^2 - 3x(2x + 1)$ factorise completely $p(x)$. **(3marks)**

10. The ages of three brothers are consecutive odd numbers.

the three brothers have to share 51 books so that each brother will get a number equal to his age. Calculate the ages of brothers. **(4marks)**

10. Find the value of x :

(a) $\frac{x}{2x-4} - \frac{x}{3x-6} = 1$

$$(b) (x+4) - \frac{x^2}{x-4} = 1$$

11.(a) Solve the simultaneous equation

$$\begin{cases} x + y = 3 \\ 2x^2 + y^2 + 3x = 15 \end{cases}$$

(b) Use answer from 16) a) and solve equation

$$\frac{m^2y - 3m + 2}{4 - y} = 0$$

12. The expression $2x^3 + ax^2 + bx + 6$ is exactly divisible by $x - 2$, and division by $x + 1$ gives a remainder of -12 . Calculate the value of a and b and factorize completely the expression.

END