

1. If a ,b ,c and d are in continued proportion , prove that
 $(b-c)^2 + (c-a)^2 + (d-b)^2 = (d-a)^2$ [4]
2. Find two numbers such that the mean proportional between them is 12 and the third proportional to them is 96. [4]
3. If $\frac{a^2 + b^2}{a^2 - b^2} = 2\frac{1}{8}$ find i) $\frac{a}{b}$ ii) $\frac{a^3 + b^3}{a^3 - b^3}$ [4]
4. Given $A = \begin{bmatrix} 1 & 1 \\ -2 & 0 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & -1 \\ 1 & 1 \end{bmatrix}$.

solve for Matrix X if $3X + B + 2A = 0$ [4]
5. If $M \times \begin{bmatrix} 1 & 1 \\ 0 & 2 \end{bmatrix} = \begin{bmatrix} 1 & 2 \end{bmatrix}$. Find i) the order of matrix M. ii) the matrix M [4]