

FORM FOUR

TIME ALLOWED: 2HRS

25

THIRDT E VALUATIONS OF MATHEMATICS

NAME OF STUDENT:.....

1.a) Given that $\begin{pmatrix} 3 & 1 \\ 1 & 0 \end{pmatrix} \begin{pmatrix} 4 & 9 \\ X-2 & Z \end{pmatrix} = \begin{pmatrix} 15 & Y \\ Z & 9 \end{pmatrix}$. Find the values of X,Y and Z.

b) Given that matrices $A = \begin{pmatrix} 3 & -2 \\ 4 & -4 \end{pmatrix}$ and $B = \begin{pmatrix} 5 & 6 \\ -6 & 3 \end{pmatrix}$, find;

- The transpose of B
- The inverse of A
- $3A-B$

2. Given the vector $op = (a+2)i + j$ and $OQ = 2ai + 5j$ where a is a constant. a) Find PQ in terms of a . b) Given that $PQ = 3i + 4j$. Find the value of a . c) Determine the direction vector of $/PQ/$ and represent it on an $i-j$ plane.

3. In the figure below $OA=a$, $OB=b$ and $OD=4OB$. Find in terms of a and b ;

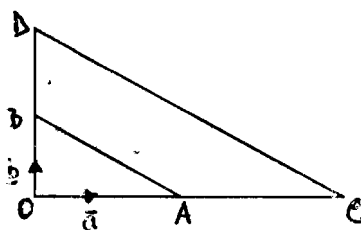
a) AB

Given that $OA:AC=1:3$, find the vector

b) OC

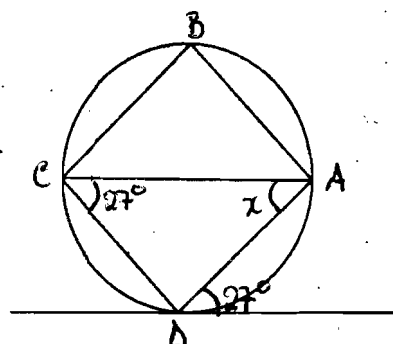
c) CD

d) State the relationship between the vectors AB and CD.



3. Determine the values X

a)



b)

