

1 - Change of Axes

	x'	y'
x	$\cos \theta$	$-\sin \theta$
y	$\sin \theta$	$\cos \theta$

Must do

- Rotation of axes prove. easy
- easy

4.Q When axes are rotated through an angle 45° , the transformed equation of a curve is $17x'^2 - 16x'y' + 17y'^2 = 2.25$. Find the original equation of the curve.

- easy

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- easy but try $ab - h^2$ in hand

4.Q If by the rotation of the rectangular co-ordinate axes about the origin, the expression $ax^2 + 2hxy + by^2$ changes to $a'x'^2 + 2h'x'y' + b'y'^2$, $a+b = a'+b'$ and $ab - h^2 = a'b' - h'^2$.

- easy

10. a. Show that if the axes are rotated through an angle $\theta = \frac{1}{2} \tan^{-1} \frac{2h}{a-b}$, then the xy term from the expression $ax^2 + 2hxy + by^2$ vanishes.

- try to find the angle...

11. a. Determine the angle through which the axes must be rotated to remove the xy term in the equation $7x^2 - 6\sqrt{3}xy + 13y^2 = 16$. Also find the transformed equation.