***Math 231 CALCULUS 2-*** *Santilli*

**Worksheet B –Rotation of Axes.**

**1.)** $xy+1=0$

Answer: $\dfrac{(y')^2}{2}-\dfrac{(x')^2}{2}=1\ ,\ \ \theta=45°$

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**2.)** $x^2-10xy+y^2+1=0$

Answer: $\dfrac{(x')^2}{1/4}-\dfrac{(y')^2}{1/6}=1\ ,\ \ \theta=45°$

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**3.)** $xy-2y-4x=0$

Answer: $\dfrac{\left(x'-3\sqrt{2}\right)^2}{16}-\dfrac{\left(y'-\sqrt{2}\right)^2}{16}=1\ ,\ \ \theta=45°$

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**4.)** $5x^2-2xy+5y^2-12=0$

Answer: $\dfrac{(x')^2}{3}+\dfrac{(y')^2}{2}=1\ ,\ \ \theta=45°$

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**5.)** $3x^2-2\sqrt{3}xy+y^2+2x+2\sqrt{3}y=0$

Answer: $x'=-(y')^2\ ,\ \ \theta=60°$

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**6.)** $9x^2+24xy+16y^2+90x-130y=0$

Answer: $y'=\dfrac{(x')^2}{6}-\dfrac{x'}{3}\ ,\ \ \theta=53.13°$