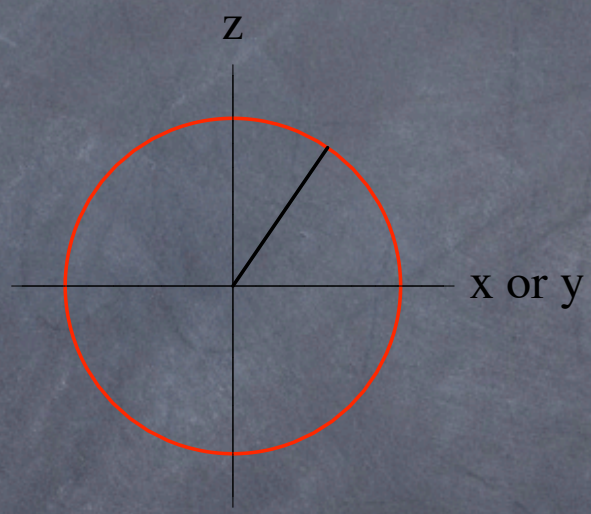
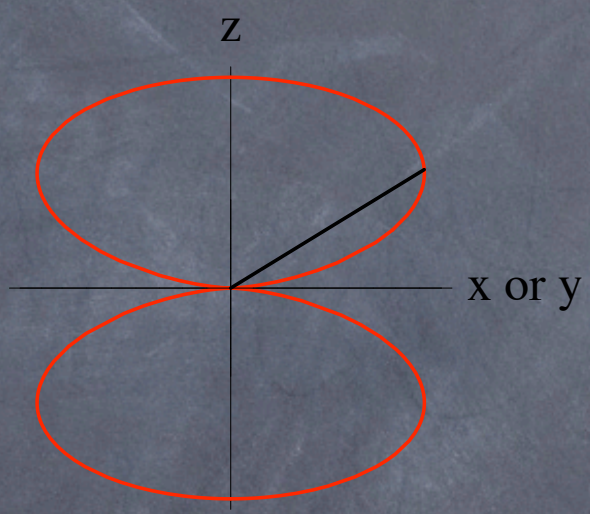
$$P_0^0$$

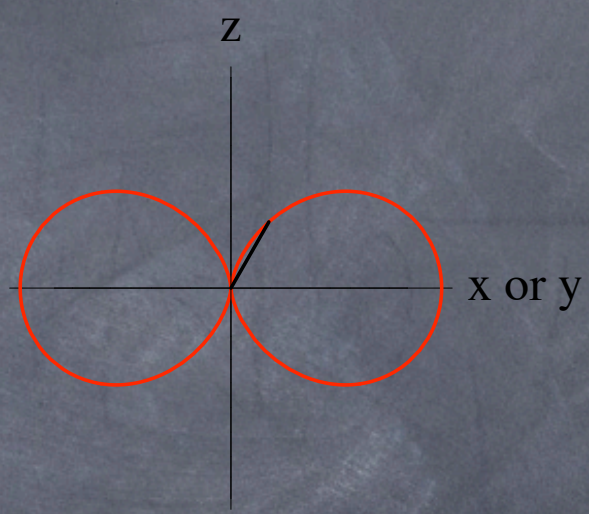


P_1^0



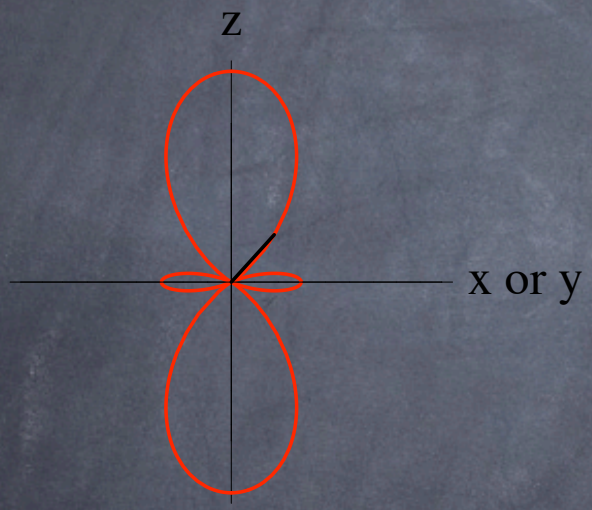
$\cos\theta$

P_1^1



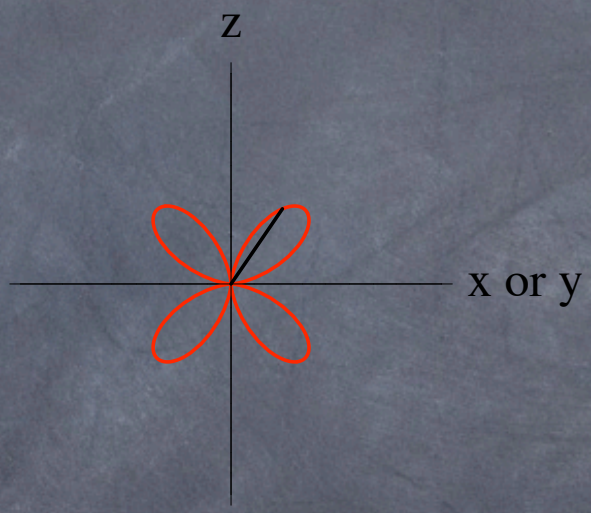
$\sin\theta$

P_2^0



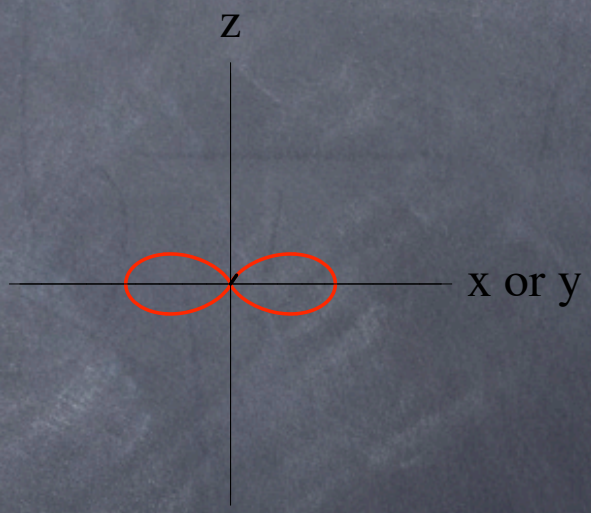
$$\frac{1}{2}(3\cos^2\theta - 1)$$

P_2^1



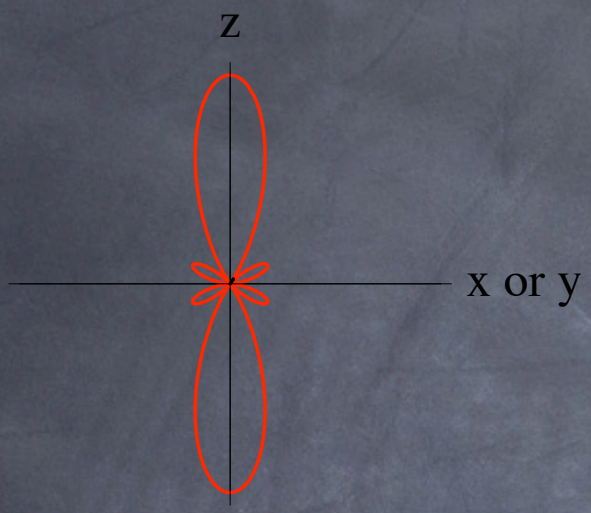
$$3\cos\theta\sin\theta$$

P_2^2



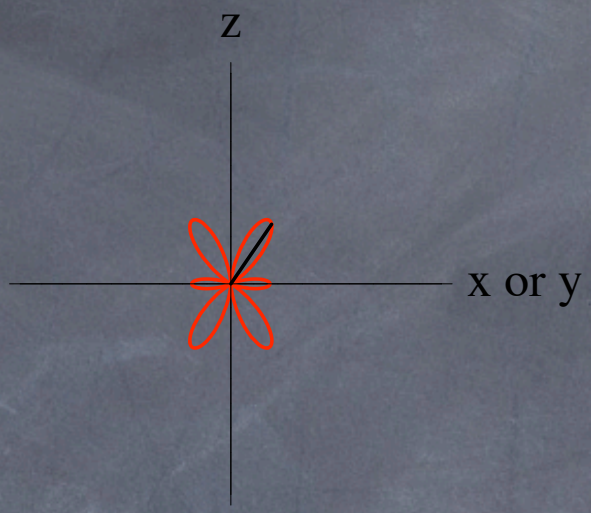
$$3\sin^2\theta$$

P_3^0



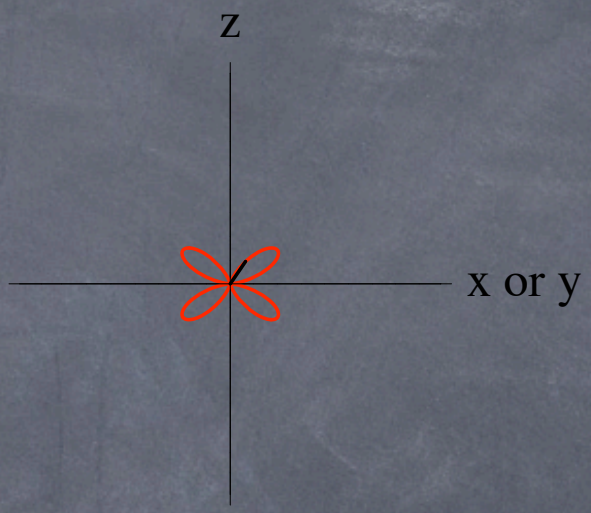
$$\frac{1}{2}(5\cos^3\theta - \cos\theta)$$

P_3^1



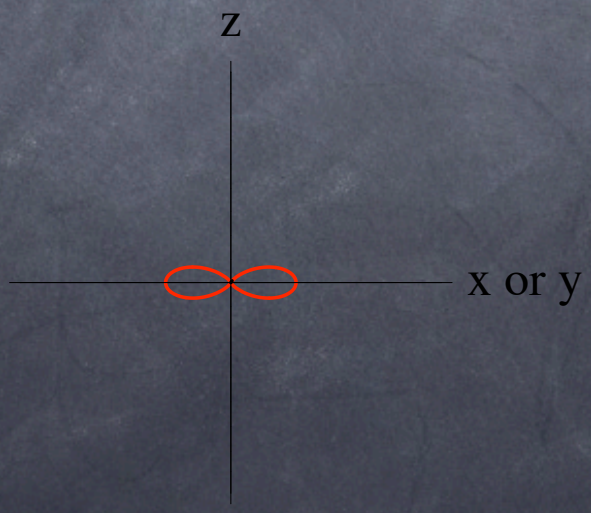
$$\frac{3}{2}\sin\theta(5\cos^2\theta - 1)$$

P_3^2



$$15\sin^2\theta\cos\theta$$

P_3^3



$$15\sin\theta(1 - \cos^2\theta)$$