MUKUL Physics Presentation Effect of charge of Coordinate Origin on Electric Dipole and Quadhupole moments. Refination of dipole moment = Pi = [ 4; dq Pi= Inida de 2 de as charge is independent of coordinate using Eg(1) So by tuangulary and of vector addition Pi = (Hi-di) dg. z Jaidg - plidg 79-9-d & 4:= 4; -Q: →(i) Pi = Pi - dig +A Fig = 4, - di = (ii) Uly for Quadrupole moment Dij = Sti hij de Using (i) 2(ii) Using (1) & (1) Oij 2 (M-di) (M-di) dg = Stingle - Stidjele - bydide + sdidjele Oj 2 Oij - fidj - fidi + didy g / (B)

Eg A & B are desired result son Origin dependency for

	1 0 0	i.
	Discussion about Resulf	*
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-	Both are uslid boy descripte distribution of	
	Both are ralid for discrete distribution of the	
	In Eg A is Pinholependent of olugin only when that distribution is neutral (9=0)	96
	Joseph La Harristan ( S = 0)	1
	distrubillion is fillings ( 9-0)	•
1	1 dans dark Only when 9	20 8 P=0
7	Illy Oil is Ougen indefendent or of with	3 4
	Illy Oij is origin independent Only when 9	
	These Results can be generalised as:  Only the leading from varishing electric  Only the leading from varishing electric  Thulfipole moment of an arbitary charge  distribution is origin Independent.  distribution is origin Independent.	
The second secon	the leading Alon Varushing allevice	
	The thought of an arbitary charge	5
	mustifule. His division Independent.	-
	distribution, is ough vhat of the always that $P=0$ . It is always to bird an Origin $\overline{0}$ and such that cleetric dipole	\a_0
	1 4 0=0 It is always	possible
3	I a \$0, A shows that plant a location dime	g moment
	thind an Oligip O at such that crucial of	
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		6.8
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Committee April		
Value of the Control		
The second secon		