	2010101058 Shrey Cupta Classmate Date Page
	W The state of the
QU	Both people start at origin. was
0)	to meet after N steps each, they must
	take equal 50. of steps to the right and
A Section	to the left, but the order in which the
	steps are taken can be different.
1000	tours we espot to the to offer appropriate to too
	60000 1901/19 100 10 8890 1 100 100 100 100 100 100 100 100 100
	Let steps token to the right be i.
E viet	: Steps token to the left are egral to Ni
	: Probability to be at x = i - (N-i)
	+ 201 prize = 21-N positions
17 1	20 74 5 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	$\frac{1}{2} = \frac{1}{2} \times \frac{1}$
	10 1 (2) (2)
	1 Prob. to 1 prob to ways to arrorge
	step right goleft left and right
THE STATE OF THE S	
5.56	= / TILEOF + STEPS & TIMES to betegs.
13 52 £	= / confor to steps to cointen to 65 teps.
na 500 é 10 sept ten 10 sept ten	10 46
na serie	GC / C / C / C / C / C / C / C / C / C /
ma said 1999 ha Said 19	2. 966, of meeting at x=zi-N is (2) NNCi
100 50 50 100 50 kg	it! 966, of meeting at x=2i-N is (1) NCi mitage 217 - stdom machan soit and so of gate oits god to toget Each person must be
100 5. 6 100 5.0 1.0 100 5.0 100 5.0 1	2. 966, of meeting at x=zi-N is (2) NNCi
13. 5-16 13. 16. 16. 16. 16. 16. 16. 16. 16. 16. 16	it! 966, of meeting at x=2i-N is (1) NCi mitage 217 - stdom machan soit and so of gate oits god to toget Each person must be
5-6	it! Prob. of meeting at $x=2i-N$ is (1) N N Ci in it as easy. Aldo not more here? Best and Be of gate with good to to get to one of the order of the second person must be of $x=2i-N$ after
	11. Prob. of meeting at $x=x_1-N$ is (2) ^{n}NC ; 12. Prob. of meeting at $x=x_1-N$ is (2) 13. Prob. of meeting at $x=x_1-N$ is (2) 14. Problem must be at $x=x_1-N$ after $x=x_1-N$ afte
1 3-7 kg	HI. 866, of meeting at $x=2i-N$ is (1) NC: [A Hase sign state of south to sent to se
	is the sequence of meeting at $x=2i-N$ is (2) ^{N}NCi is the sequence of section at $x=2i-N$ is (2) ^{N}NCi is the sequence of section and the sequence of $x=2i-N$ after $x=2i-N$
	Now, of meeting at $x=j_1-N$ is (1) NNC: $x=j_1-N$ is (2) $x=j_1-N$ is (3) $x=j_1-N$ is (4) $x=j_$
	Now, of meeting at $x=j_1-N$ is (1) NNC: $x=j_1-N$ is (2) $x=j_1-N$ is (3) $x=j_1-N$ is (4) $x=j_$
	Rober of meeting at $x=j-N$ is $(i)^{N}NCi$ and and $(i)^{N}$ decimal and $(i)^{N}$ de



6	Now, white the work of the
J 7 .	FOR a person to be at the origin after
601	N Steps the not of right steps should be
9	egival to the noiof left steps. T.e., it the
	person starts at origin and wants to
	end at origin after in steps, in most be
	even with N steps in either direction.
j- C	1. 8000: of ending of orgin = (1) N(2 (1) N(2 N(N(2
	Stoboof Ways to
	eleccities Latin = steppingleft (hose N)
al Book Brown	x left and eight
	Prob. of steps
	Stepping right.
20700	of exect of done of others
tripi	1600 + 201 19910 HOTO 457
	· P(end at origin if start at origin) = MCN12 Niseven
	2N and Positive
	During a concer to me to the followise
	the Random Voriable representing
1. 1. C)	Let di represent the ith step to be taken.
701704	1-12 = 2; the
7/-	ishore de = +1 right step
	(-1, left step.
	titach I dala on what Lizi Co Coca
	Now
	Prob. (di = +1) = 8(di = -1) = 60?
(4)	5-1-3-4-5
1 4 × 5 4	Both ore
	Equally Probable
180	



	: E [di] = 1 C+0 += C+0 (16)= (=
	1002
	= 0 0 = 1,6,6,15
	Now
	Let de represent the net displacement
	Of the drook ofter waters. I to
	299till 79+1-1 50076 40
	:. d= d1+d2+d3+_=+dn
	(1.6+ -+ ch+ch+d) ==6
	: E[d] = E[d] + E[d2] + + E[d2]
	1+2616 + 6616) C = \$6 E Cdite 6 + 56 = 56 ==
	1=4
	+5616+5610 = ECOTECN:0556+5673=15673:
	1.6x=> [EPAT = O] => Hero displacementis
	Libras EEDJ=00 => Hear displacementis
	C-C + 1267 = - 1
4)	2011
374 107	Again using some definition of di as in
	pe previous port.
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	· E[d:2]= 1 (+02 +1(-02 =1+1
	2 2 2 2
46	
	Also E[didi]= E[di] E[di]
	This is true because each step is independent
14 (14 (14 (14 (14 (14 (14 (14 (14 (14 (of the previous steps. Each steps is on
	independent event.
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