N		DATE:	
140	):	for each the integer	
1)	Let P(n) be the statement ++9+ 14+19+	$+ (5n-1) = \frac{n(5n+3)}{2}  n \geq 1$	
Base Step:	$\frac{1}{1}$	d indeed LHS = RHF.	
	RHS = 1(5(1) +37 = 4		
	=> P(1) = T		
Inductive			
Step:	Assume P(n) is true when n=k, we have to po	ne P(k+1) is true.	
	when n= k+1 + + 9 + 14 + 19 + + (5	5k-1)+ (·5 k+4)	
W.	$=\frac{1(5k+3)}{3}+5k+4$		
	$= \frac{k(5k+3)}{2} + \frac{2(5k+4)}{2}$		
	$=\frac{5k^2+13k+8}{2}$		
	= (k+1)(5k+8)		
	Thus P(k+1) is true.		
Conclusion:	∴ P(1) = T		
	$: P(k) \rightarrow P(k+1)$		
	So we have proved by induction that \$+9+1	$4 + 19 + + (5n-1) = \frac{n(5n+3)}{2}$	
2)	Let P(n) be the statement 2 <sup>n</sup> divides an for	all integers n > 1.	
ase Step:	when $n=1$ , $a_1=4$ (can be divided by 2) $\Rightarrow P(1)=7$		
	when $n=2$ , $\alpha_2=12$ (can be divided by	4) => P(2) = T	
	when $n=3$ , $a_3=8$ (can be divided by	$8) \Rightarrow P(3) \equiv T$	
ductive Step:	Assume that P(n) is true for all n < k, re	have to pure P(1+1) is true.	
	when n=k+1, ak+1 = 10 ak - 24 ak-2.		
	Assumption states that P(k) and P(k-2) are to	$a_{k} = (y)(2^{k})$ and $a_{k-2} = (n)(2^{k})$	
	for some integer x and y.		
	$a_{k+1} = 10 a_k - 24 a_{k-2}$	Linclusion:	
	= 10 ( 4 2 h) - 24 (x 2 h-2)	:. P(1) = T	
	$a_{k+1} = 10 a_k - 24 a_{k-2}$ $= 10 (y 2^k) - 24 (x 2^{k-2})$ $= 5 \times 2 (y 2^k) - 8 \times 3 (x 2^{k-2})$	: P(1) 1 P(2) = T	
177	= $5y(2^k)(2) - 3x(2^{k-2})(2^3)$	: P(1) A P(2) A P P(2) = T	
	$= (5y)(2^{k+1}) - 6h (3x)(2^{k+1})$	:. P(1) 1 P(2) 1 P(3) 1 1 P(k)	
	$= \frac{(5y)(2^{k+1}) - (3x)(2^{k+1})}{(5y - 3x)}$	-> P(1+1)	
	Thus P(k+1) is true	So we have proved by strong induction	
	(	that P(n) is true for all integers	
	Udzic	n > 1.	

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4)	"XEY "YEX"	
-/	(1.1) (1.1) =	
	$\frac{1}{2}\left(1+\left(1+\frac{1}{4}\right)^{\frac{1}{2}}\right)^{\frac{1}{2}}\left(1+\frac{1}{4}\right)^{\frac{1}{2}}$	
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-	Conclusion : (1) 1 7	
-	$(n_1)_1 \leftarrow (1)_{1 \leq n} $	
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