1.	The n th even number is $2n$.		
	The	next even number after $2n$ is $2n + 2$	
	(a)	Explain why.	
			(1)
	(b)	Write down an expression, in terms of n , for the next even number after $2n + 2$	
			(1)
	(c)	Show algebraically that the sum of any 3 consecutive even numbers is always a multiple of 6	

(3) (5 marks)



3. Prove, using algebra, that the sum of two consecutive whole numbers is always an odd number.
<u>(3 marks)</u>

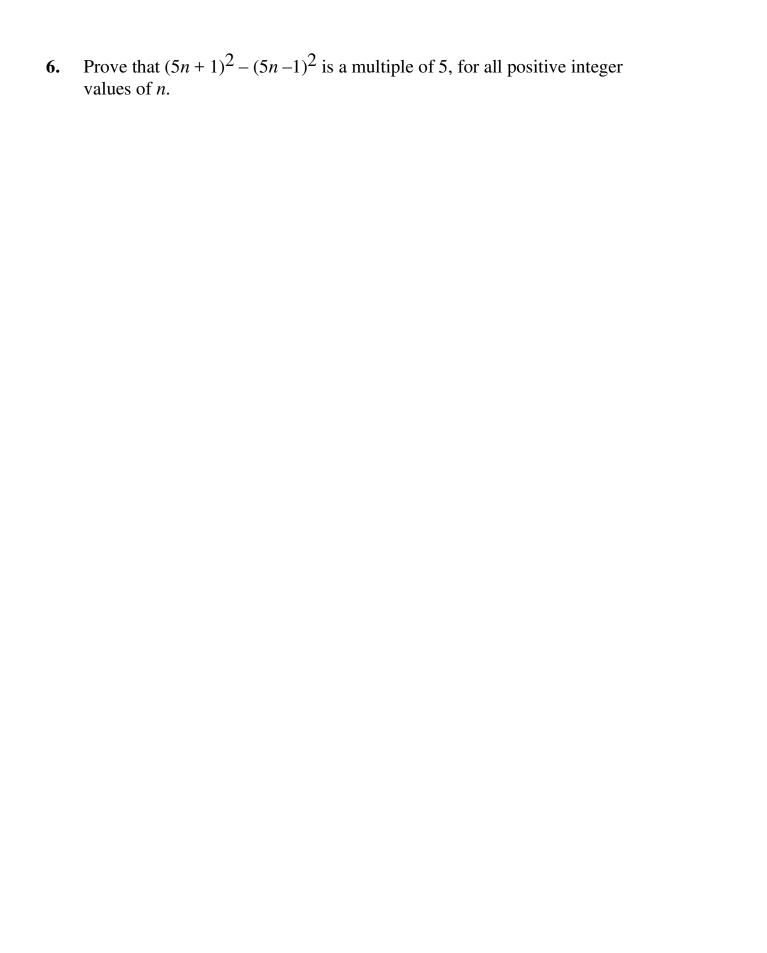
4. Prove that

$$(2n+3)^2 - (2n-3)^2$$
 is a multiple of 8

for all positive integer values of n.

(3 marks)





(3 marks)



8. Prove that

 $(n+1)^2 - (n-1)^2 + 1$ is always odd for all positive integer values of n.

(3 marks)

9. Prove algebraically that the sum of the squares of any two consecutive numbers always leaves a remainder of 1 when divided by 4.
<u>(4 marks)</u>