Question		on	Answer	Marks	AO	Guidance	
12	(a)		Letting $h=0$ does not make sense as this has	B1	2.3	Statement identifying a fault – should be equivalent to one of these	
			the two points coincident			statements	
			Dividing by zero is not allowed				
			$\frac{0}{0}$ is not well defined				
			$\frac{0}{0}$ is not equal to 1			Do not allow for $\frac{0}{0} = 0$ or $\frac{0}{0} = 6$ etc	
				[1]			
12	(b)		$\lim_{h \to 0} \left(\frac{f(3+h) - f(3)}{h} \right)$	M1	2.1	replaces $h = 0$ with the idea of limit for	an expression which is not
						just $\lim_{h \to 0} \left(\frac{f(x+h) - f(x)}{h} \right)$	
						Allow for the value 3 used or this function ie $\lim_{h \to 0} \left(\frac{(x+h)^2 - x^2}{h} \right)$	
			gradient of chord is $6+h$	M1	2.1	Simplifies the fraction	
			gradient of the curve is 6	A1	2.1	Must be seen	
				[3]			
12	(c)		Gradient of the normal is $-\frac{1}{6}$	M1	1.1 a	Allow for $y = -\frac{1}{6}x + c$ seen even if	Allow for a value found by an attempt to differentiate
						their c is incorrect	$v = x^2$ not from first
						FT their (b)	principles
			Equation of the normal is $y-9 = -\frac{1}{6}(x-3)$	A1	1.1b	Any form FT their (b); ISW	x + 6y = 57
				[2]			