Question	Scheme	Marks	AOs
1(a)	$(3x+2)^2 = 9x^2+12x+4$ or $(3x+2)^2 = 4x^2-12x+9$	M1	1.1b
	$= 9x^2+12x+4+4x^2-12x+9$	A1	1.1b
	$= 13x^2+13 = 13(x^2+1)$ *	A1*	2.1
		(3)	
(b)	13	B1	2.2a
		(1)	
(c)	"Sometimes true" and chooses any non-integer value for x and shows false. E.g., $x=\frac{1}{2}$ $13\left(\left(\frac{1}{2}\right)^2+1\right)=\frac{65}{4}$ which is not a multiple of 13	M1	2.3
	Chooses any integer value for x or x^2 and shows true. E.g., $x=1$ $13(1^2+1)=26=13\times 2$ and so is a multiple of 13	A1	2.4
		(2)	
			(6 marks)

Notes:

(a)

M1: Attempts to expand either $(3x+2)^2$ or $(2x-3)^2$. Look for 3 out of the 4 terms to be correct.

A1: Reaches $9x^2+12x+4+4x^2-12x+9$

Must be seen on one line or both quadratic expressions seen **and** addition implied by $13x^2+13$

A1*: Achieves $13x^2+13$ from correct work and arrives at $f(x)=13(x^2+1)$

(b)

B1: cao

(c)

M1: "Sometimes true" and chooses any non-integer value for x and shows false. E.g., $x=\frac{1}{2}$

$13\left(\left(\frac{1}{2}\right)^2+1\right)=\frac{65}{4}$ which is not a multiple of 13.

A1: Chooses any integer value for x and shows true.

E.g., $x=1$ $13(1^2+1)=26=13\times 2$ and so is a multiple of 13

The M1 must have been scored and calculations must be correct.