Algebraic Proof

(a)	(b)	(c)
Show that $3x(x+5)+2x(x-5) \equiv 5x(x+1)$ $3x^2+15x+2x^2-10x$ $=5x^2+5x$ $=5x(x+1)$	Show that $(x+6)(x-2)+12 \equiv x(x+4)$ $x^2+6x-2x-12+12$ $=x^2+4x$ $=x(x+4)$	Show that $(x-4)^2+6x-16 \equiv x(x-2)$ $x^2-4x-4x+16+6x-16$ $=x^2-2x$ $=x(x-2)$
(d)	**(e)**	**(f)**
Show that $3(8-x)+2(5x-6) \equiv ax+b$ where a and b are integers to be found $24-3x+10x-12$ $=7x+12$	Show that $(x+5)(x-3)-x(x-8) \equiv ax+b$ where a and b are integers to be found $x^2+5x-3x-15-x^2+8x$ $=10x-15$	Show that $(x+6)^2+4(x-9) \equiv x(x+a)$ where a is an integer to be found $x^2+6x+6x+36+4x-36$ $=x^2+16x$ $=x(x+16)$
(g)	**(h)**	**(i)**
Show that $(2x+5)(x-1)+3(5-x)=ax^2+b$ where a and b are integers to be found $2x^2+5x-2x-5+15-3x$ $=2x^2+10$	Show that $(x+4)^2+(x+2)(x-8)=ax(x+b)$ where a and b are integers to be found $x^2+8x+16+x^2-6x-16$ $=2x^2+2x$ $=2x(x+1)$	Show that $(3x+4)^2-(5x+8)(x+2) \equiv ax(bx+c)$ where a and b are integers to be found $9x^2+24x+16-5x^2-18x-16$ $=4x^2+6x$ $=2x(2x+3)$