a) Verify that $x^2(x+1)^2 - (x-1)^2 x^2 = 4x^3$ for $x = 3$

b) Prove that $x^2(x+1)^2 - (x-1)^2 x^2 \equiv 4x^3$ for all x

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a)	LHS	$= x^2(x+1)^2 - (x-1)^2 x^2$
	When $x = 3$, LHS	$= 3^2(3+1)^2 - (3-1)^2 3^2$
		$= 3^2 \cdot 4^2 - 2^2 \cdot 3^2$
		$= 9 \cdot 16 - 4 \cdot 9$
		$= 9 \cdot 16 - 4 \cdot 9$
		$= 144 - 36$
		$= 108$
	RHS	$= 4x^3$
	When $x = 3$, RHS	$= 4 \cdot 3^3$
		$= 4 \cdot 27$
		$= 108$
b)	LHS	$\equiv x^2(x+1)^2 - (x-1)^2 x^2$
		$\equiv x^2(x^2 + 2x + 1) - (x^2 - 2x + 1)x^2$
		$\equiv x^4 + 2x^3 + x^2 - x^4 + 2x^3 - x^2$
		$\equiv 4x^3$
		$\equiv RHS$