II **Find the value of a for the following polynomials to be perfect squares.**

(*a*) $4x^4 - 12x^3 + 37x^2 - 42x + a$

Solution: $4x^4 - 12x^3 + 37x^2 - 42x + a$ is a perfect square, to find a

		2	– 3	+ 7		
	2	4	–12	37	– 42	a
		4				
4 – 3			–12	37		
			–12	9		
4 – 6 + 7				28	– 42	a
				28	– 42	49
						0

$\therefore a = 49$

(b) $x^4 - 4x^3 + 10x^2 - ax + 9$

Solution: $x^4 - 4x^3 + 10x^2 - ax + 9$ is a perfect square, to find a

		1	– 2	+ 3		
	1	1	–4	10	$-a$	9
		1				
2 – 2			–4	10		
			–4	4		
2 – 4 + 3				6	$-a$	9
				6	– 12	9
						0