Multiplying Polynomials - Box Method

Multiply the polynomials using box method.

1) $(5k^2 + 9k - 3)(2k^3 - 5k^2 - 4k + 1)$ =   _____

	$2k^3$	$-5k^2$	$-4k$	1
$5k^2$				
$9k$				
-3				

2) $(4x^4 - x^3 - 2x^2)(x^5 + 3x^4 + x^3 - 4x^2)$ =   _____

	x^5	$3x^4$	x^3	$-4x^2$
$4x^4$				
$-x^3$				
$-2x^2$			$-$	

3) $(m^2 - 5m + 6)(m^4 - 2m^3 + m^2 - m)$ =   _____

	m^4	$-2m^3$	m^2	$-m$
m^2				
$-5m$				
6				

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Answer key

Multiply the polynomials using box method.

1) $(5k^2 + 9k - 3)(2k^3 - 5k^2 - 4k + 1) =$ **$10k^5 - 7k^4 - 71k^3 - 16k^2 + 21k - 3$**

	$2k^3$	$-5k^2$	$-4k$	1
$5k^2$	**$10k^5$**	**$-25k^4$**	**$-20k^3$**	**$5k^2$**
$9k$	**$18k^4$**	**$-45k^3$**	**$-36k^2$**	**$9k$**
-3	**$-6k^3$**	**$15k^2$**	**$12k$**	**-3**

2) $(4x^4 - x^3 - 2x^2)(x^5 + 3x^4 + x^3 - 4x^2) =$ **$4x^9 + 11x^8 - x^7 - 23x^6 + 2x^5 + 8x^4$**

	x^5	$3x^4$	x^3	$-4x^2$
$4x^4$	**$4x^9$**	**$12x^8$**	**$4x^7$**	**$-16x^6$**
$-x^3$	**$-x^8$**	**$-3x^7$**	**$-x^6$**	**$4x^5$**
$-2x^2$	**$-2x^7$**	**$-6x^6$**	**$-2x^5$**	**$8x^4$**

3) $(m^2 - 5m + 6)(m^4 - 2m^3 + m^2 - m) =$ **$m^6 - 7m^5 + 15m^4 - 18m^3 + 11m^2 - 6m$**

	m^4	$-2m^3$	m^2	$-m$
m^2	**m^6**	**$-2m^5$**	**$-m^4$**	**$-m^3$**
$-5m$	**$-5m^5$**	**$10m^4$**	**$-5m^3$**	**$5m^2$**
6	**$6m^4$**	**$-12m^3$**	**$6m^2$**	**$-6m$**