Dividing Polynomials - Box Method

Divide the polynomials using box method.

1) $\dfrac{8t^4 + 12t^3 - 46t^2 - 71t + 9}{2t^2 - t - 9}$ =

$2t^2$			
$-t$			
-9			

2) $\dfrac{9m^4 + 27m^3 - 2m^2 - 45m - 5}{m^2 + 9m + 1}$ =

m^2			
$9m$			
1			

3) $\dfrac{6k^4 + 8k^3 - 19k^2 - 9k + 9}{k^2 + k - 3}$ =

k^2			
k			
-3			

4) $\dfrac{7p^4 + 5p^3 + 25p^2 - 9p - 4}{7p^2 - 2p - 1}$ =

$7p^2$			
$-2p$			
-1			

5) $\dfrac{5n^4 - 15n^3 + 39n^2 - 12n + 28}{5n^2 + 4}$ =

$5n^2$			
$0n$			
4			

6) $\dfrac{6x^4 - 33x^3 + 35x^2 - 46x + 16}{x^2 - 5x + 2}$ =

x^2			
$-5x$			
2			

Answer key

Divide the polynomials using box method.

1) $\dfrac{8t^4 + 12t^3 - 46t^2 - 71t + 9}{2t^2 - t - 9}$ = **$4t^2 + 8t - 1$**

	$4t^2$	**$8t$**	**-1**
$2t^2$	**$8t^4$**	**$16t^3$**	**$-2t^2$**
$-t$	**$-4t^3$**	**$-8t^2$**	**t**
-9	**$-36t^2$**	**$-72t$**	**9**

2) $\dfrac{9m^4 + 27m^3 - 2m^2 - 45m - 5}{m^2 + 9m + 1}$ = **$3m^2 - 1$**

	$3m^2$	**$0m$**	**-5**
m^2	**$9m^4$**	**$0m^3$**	**$-5m^2$**
$9m$	**$27m^3$**	**$0m^2$**	**$-45m$**
1	**$3m^2$**	**$0m$**	**-5**

3) $\dfrac{6k^4 + 8k^3 - 19k^2 - 9k + 9}{k^2 + k - 3}$ = **$6k^2 + 2k - 3$**

	$6k^2$	**$2k$**	**-3**
k^2	**$6k^4$**	**$2k^3$**	**$-3k^2$**
k	**$6k^3$**	**$2k^2$**	**$-3k$**
-3	**$-18k^2$**	**$-6k$**	**9**

4) $\dfrac{7p^4 + 5p^3 + 25p^2 - 9p - 4}{7p^2 - 2p - 1}$ = **$p^2 + p + 4$**

	p^2	**p**	**4**
$7p^2$	**$7p^4$**	**$7p^3$**	**$28p^2$**
$-2p$	**$-2p^3$**	**$-2p^2$**	**$-8p$**
-1	**$-p^2$**	**$-p$**	**-4**

5) $\dfrac{5n^4 - 15n^3 + 39n^2 - 12n + 28}{5n^2 + 4}$ = **$n^2 - 3n + 7$**

	n^2	**$-3n$**	**7**
$5n^2$	**$5n^4$**	**$-15n^3$**	**$35n^2$**
$0n$	**$0n^3$**	**$0n^2$**	**$0n$**
4	**$4n^2$**	**$-12n$**	**28**

6) $\dfrac{6x^4 - 33x^3 + 35x^2 - 46x + 16}{x^2 - 5x + 2}$ = **$6x^2 - 3x + 8$**

	$6x^2$	**$-3x$**	**8**
x^2	**$6x^4$**	**$-3x^3$**	**$8x^2$**
$-5x$	**$-30x^3$**	**$15x^2$**	**$-40x$**
2	**$12x^2$**	**$-6x$**	**16**