November 4, 2015

Dividend, Quotient, Division, Remainder

$\frac{19}{4} = 4\overline{)19}\ \overline{-16}\ 3 = 4\frac{3}{4} = \frac{(4\cdot 4)+3}{4}$

Dividend = Division · Quotient + Remainder

$19 = 4 \cdot 4 + 3$

$= 16 + 3$

$19 = 19$ ✓

Nov 4-11:01 AM

$P(x) = D(x) \cdot Q(x) + R(x)$

(Dividend) = (Division) · (Quotient) + Remainder

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$6x^2 - 26x + 12 \div x - 4$

(Dividend) (Division)

	$6x$	-2
$x-4$ | $6x^2$	$-26x$	$+12$
$-6x^2$	$+24x$	
0	$-2x$	$+12$
	$+2x$	-8
	0	4

$Q(x)$: $6x-2$ $\quad$ $R(x)$: $\frac{4}{x-4}$

$P(x) = D(x) \cdot Q(x) + R(x)$

$6x^2-26x+12 = [(x-4)\cdot(6x-2)] + 4$

$= 6x^2 - 2x - 24x + 8 + 4$

$= 6x^2 - 26x + 12$

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$P(x) = 8x^4 + 6x^2 - 3x + 1$

$D(x) = 2x^2 - x + 2$

	x^4	x^3	x^2	x^1	x^0
		0	$4x^2$	$2x$	
$2x^2-x+2$ |	$8x^4$	$+0x^3$	$+6x^2$	$-3x$	$+1$
	$-8x^4$	$+4x^3$	$-8x^2$		
	0	$4x^3$	$-2x^2$	$-3x$	
		$-4x^3$	$+2x^2$	$-4x$	
		0	0	$-7x$	$+1$

ans.: $4x^2 + 2x - \frac{7x+1}{2x^2-x+2}$

$8x^4 + 6^2 - 3x + 1 = (2x^2-x+2)(4x^2+2x) - 7x + 1$

$= 8x^4 + 4x^3 - 4x^3 - 2x^2 + 8x^3$

$+4x - 7x + 1$

$= 8x^4 + 6x^2 - 3x + 1$ ✓

Nov 4-11:27 AM