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Generic Box Method

$$8x^3 + 14x^2 + x - 2 \div 2x + 1$$

2x	$8x^3$	$10x^2$	$-4x$	0
1	$4x^2$	$5x$	-2	0

$$4x^2 + \underline{\hspace{2cm}} = 10x^2$$

$$5x + \underline{\hspace{2cm}} = \cancel{10x}$$

$$-2 + \underline{\hspace{2cm}} = -2$$

answer: $4x^2 + 5x - 2$

$$\text{ex 2: } 5x^4 + 18x^3 + 29x^2 + 7x - 5 \div (5x + 3)$$

	x^3	$3x^2$	$4x$	-1	R
$5x$	$5x^4$	$15x^3$	$20x^2$	$-5x$	-2
3	$3x^3$	$9x^2$	$12x$	-3	

$$- 3x^3 + 15x^3 = 18x^3$$

$$- 9x^2 + 20x^2 = 29x^2$$

$$- 12x + -5x = 7x$$

$$- 3 + -2 = -5$$

$$\text{answer: } x^3 + 3x^2 + 4x - 1 \quad \frac{-2}{5x+3}$$