Ex 0 $(3x^3 - 4x^2 - 3x - 2) \div (x - 3)$

opposite sign of -3

coefficients of dividend

$3 \mid 3 \quad -4 \quad -3 \quad -2$

$\downarrow \quad 9 \quad 15 \quad 36$

$3 \quad 5 \quad 12 \mid 34$

bring down leading coefficient

$3x^2 \quad 5x \quad 12$

coefficients of quotient

remainder

Quotient: $3x^2 + 5x + 12 + \frac{34}{x-3}$

Ex 1 $(2x^3 + x^2 + 12) \div (x + 2)$

$0x$

$-2 \mid 2 \quad 1 \quad 0 \quad 12$

$\downarrow \quad -4 \quad 6 \quad -12$

$2 \quad -3 \quad 6 \mid 0$

$2x^2 - 3x + 6$

$2x^2 - 3x + 6$

Ex2 $(2t^5 - 3t^4 - 50t^3 - 24t^2) \div (t-6)$

$0t^1$ 0 → placeholders for $0t^1$ & constant

6	2	-3	-50	-24	0	0
	↓	12	54	24	0	0
	$2t^4$	$+9t^3$	$+4t^2$	$+0t^1$	0	0

$2t^4 + 9t^3 + 4t^2$

Ex3 $(4x^3 + x - 1) \div (2x^1 - 1)$

$2(x - \frac{1}{2})$

$\frac{1}{2}$	4	0	1	-1
	↓	2	1	1
	4	2	2	0

2

$2x^2 + 1x + 1$

$2x^2 + x + 1$

Ex 4 $(6x^3+7x^2+x+1) \div (2x+3)$

$2\left(x+\frac{3}{2}\right)$

$-\frac{3}{2}$ | 6 7 1 1

↓ −9 3 −6

6 −2 4 | −5

÷2

$3x^2-1x+2+\frac{-5}{2x+3}$

$3x^2-x+2+\frac{-5}{2x+3}$