DIVIDING POLYNOMIAL BY A MONOMIAL

① PUT EACH TERM OVER THE MONOMIAL IN SEPARATE FRACTIONS

② SIMPLIFY

ex: $11\overline{)3058}$ → 2; -22; 858

1. $\frac{15x^5 - 10x^2 + 5}{10x^2}$

$\frac{15x^5}{10x^2} - \frac{10x^2}{10x^2} + \frac{5}{10x^2}$

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

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

2. $\frac{12m^4n^7 - 15m^{13}n^7}{-3m^{10}n^{12}}$

$\frac{12m^4n^7}{-3m^{10}n^{12}} - \frac{15m^{13}n^7}{-3m^{10}n^{12}}$

$\frac{4}{-1m^6n^5} + \frac{5m^3}{1n^5}$

$\frac{-4}{m^6n^5} + \frac{5m^3}{n^5}$

3. $x-7 \overline{)x^2-3x-28}$ → $x+4$

$-(x^2-7x)$

$4x-28$

$-(4x-28)$

0

$x(x-7)$

x^2-7x

$4(x-7)$

$4x-28$

4. $x+3 \overline{)x^3+8x^2+14x-3}$ → x^2+5x-1

$-(x^3+3x^2)$

$5x^2+14x-3$

$-(5x^2+15x)$

$-1x-3$

$-(-x-3)$

0

$x^2(x+3)$

x^3+3x^2

$5x(x+3)$

$5x^2+15x$

$-1(x+3)$

$-x-3$

5. $x+2 \overline{)3x^2+x-10}$ → $3x-5$

$-(3x^2+6x)$

$-5x-10$

$-(-5x-10)$

0

$3x(x+2)$

$3x^2+6x$

$-5(x+2)$

$-5x-10$

6. $-3+x \overline{)-10x+13+x^2}$

NOTE: EVERYTHING MUST BE IN STANDARD FORM

$x-3 \overline{)x^2-10x+13}$ → $x-7+\frac{-8}{x-3}$

$-(x^2-3x)$

$-7x+13$

$-(-7x+21)$

-8

$x(x-3)$

x^2-3x

$-7(x-3)$

$-7x+21$

7. $-1+5x \overline{)25x^2-10}$

NOTE: PUT ZERO PLACEHOLDERS FOR MISSING POWERS

$5x-1 \overline{)25x^2+0x-10}$ → $5x+1+\frac{-9}{5x-1}$

$-(25x^2-5x)$

$5x-10$

$-(5x-1)$

-9

$5x(5x-1)$

$25x^2-5x$

$1(5x-1)$

$5x-1$