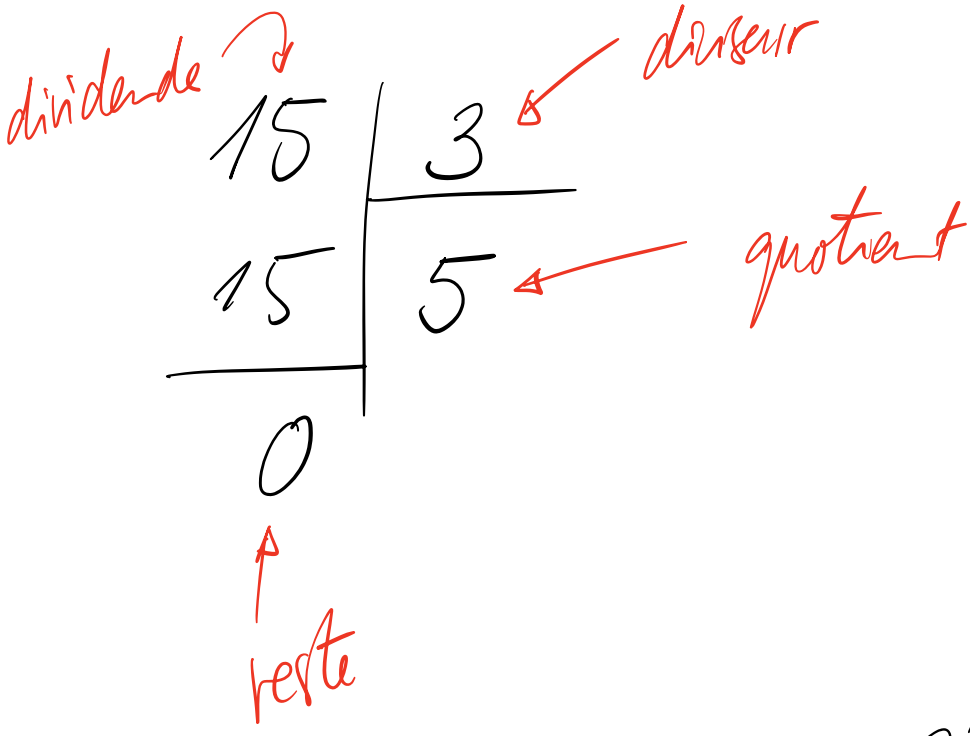
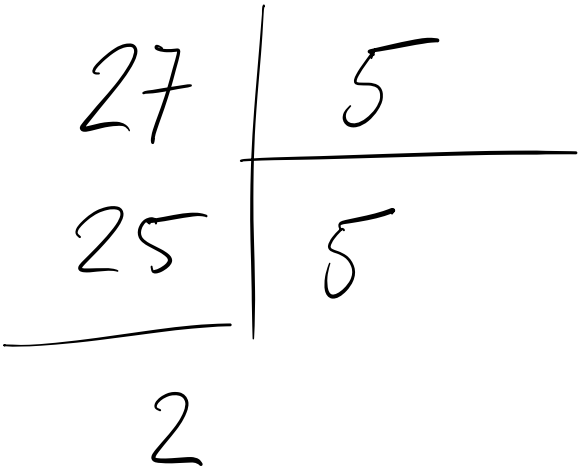
Division avec reste

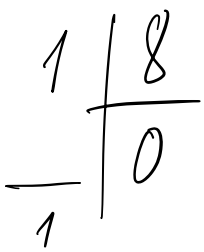


$$\frac{27}{5} = \frac{25+2}{5} = 5 + \frac{2}{5}$$



Égalité fondamentale

$$27 = 5 \cdot 5 + 2$$



$$1 = 8 \cdot 0 + 1$$

1257	33
99	38
267	
264	
3	

$3 < 33 \Rightarrow$ STOP

$$1257 = 33 \cdot 38 + 3$$

1257	33
99	38
267	
264	
3	

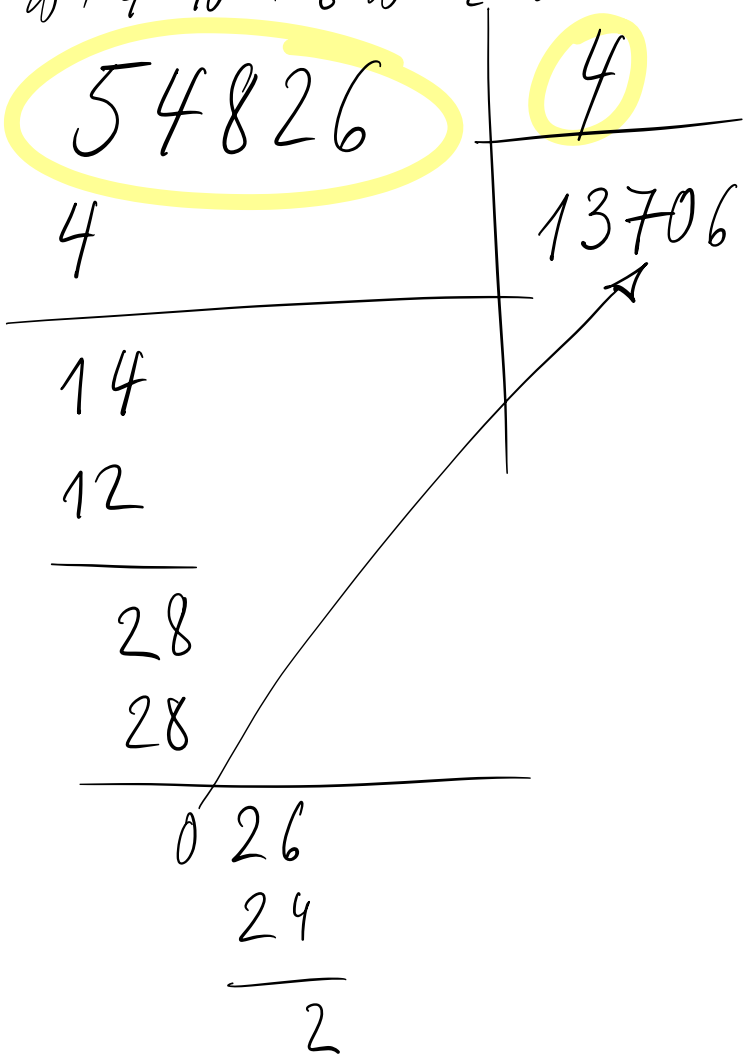
$3 < 33 \Rightarrow$ STOP

$$\frac{1257}{33} = 38 + \frac{3}{33}$$

$$1257 = 33 \cdot 38 + 3$$

33
66
99
~~132~~
165
198
231
264 $= 8 \cdot 33$

$5 \cdot 10^4 + 4 \cdot 10^3 + 8 \cdot 10^2 + 2 \cdot 10^1 + 6$



$54\,826 = 4 \cdot 13706 + 2$

AVEC DES POLYNÔMES

$X \cdot ? = X^2$

$X \cdot ? = 3X$

$$\begin{array}{r|l} X^2+5X+6 & X+2 \\ \text{soustraction} - X^2+2X & X+3 \\ \hline 3X+6 & \\ 3X+6 & \\ \hline 0 & \end{array}$$

$X^2+5X+6 = (X+2)(X+3)+0$

$= (X+2)(X+3)$

factoriser

$-2-0=-2$

reste

X^3-2X^2+3X+4 | X^2+1

$-(X^3+0X^2+X)$ | $X-2$

$-2X^2+2X+4$

$-(-2X^2-2)$

$2X+6$ reste

$X^2 \cdot ? = X^3$

$X^2 \cdot ? = -2X^2$

$X^3-2X^2+3X+4 = (X^2+1)(X-2) + 2X+6$

$$x^3+0x^2+0x+1 \quad | \quad x+1$$

$$x^3+x^2 \qquad\qquad x^2-x+1$$

$$-x^2+0x+1$$

$$-x^2-x$$

$$x+1$$

$$x+1$$

$$0$$

$$x^3+1=(x+1)(x^2-x+1)$$

$$+0$$

$$x^5+0x^4+0x^3+0x^2+0x+1 \quad | \quad x^2+x+1$$

$$x^5+x^4+x^3 \qquad\qquad x^3-x^2+1$$

$$-x^4-x^3+0x^2+0x+1$$

$$-x^4-x^3-x^2$$

$0x^2-(-x^2)$

$$x^2+0x+1$$

$$x^2+x+1$$

$$-x$$

$$x^5+1=(x^2+x+1)(x^3-x^2+1)$$

$$-x$$