

Factorisation

$$(a + b)^2 = a^2 + 2ab + b^2$$

$$(a - b)^2 = a^2 - 2ab + b^2$$

$$(a - b)(a + b) = a^2 - b^2$$

factorise

$$\underbrace{16x^2}_{(4x)^2} - \underbrace{25}_{5^2} = (4x - 5)(4x + 5)$$

$$\underbrace{49}_{7^2} - \underbrace{36x^2}_{(6x)^2} = (7 - 6x)(7 + 6x)$$

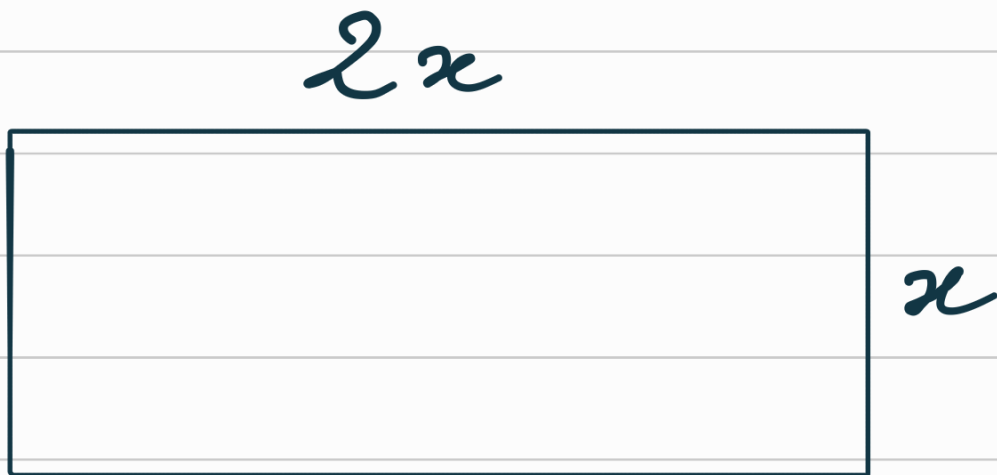
$$\underbrace{4x^2}_{(2x)^2} - 12x + \underbrace{9}_{3^2} = (2x - 3)^2$$

$$9x^2 + 30x + 25$$

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



Functions

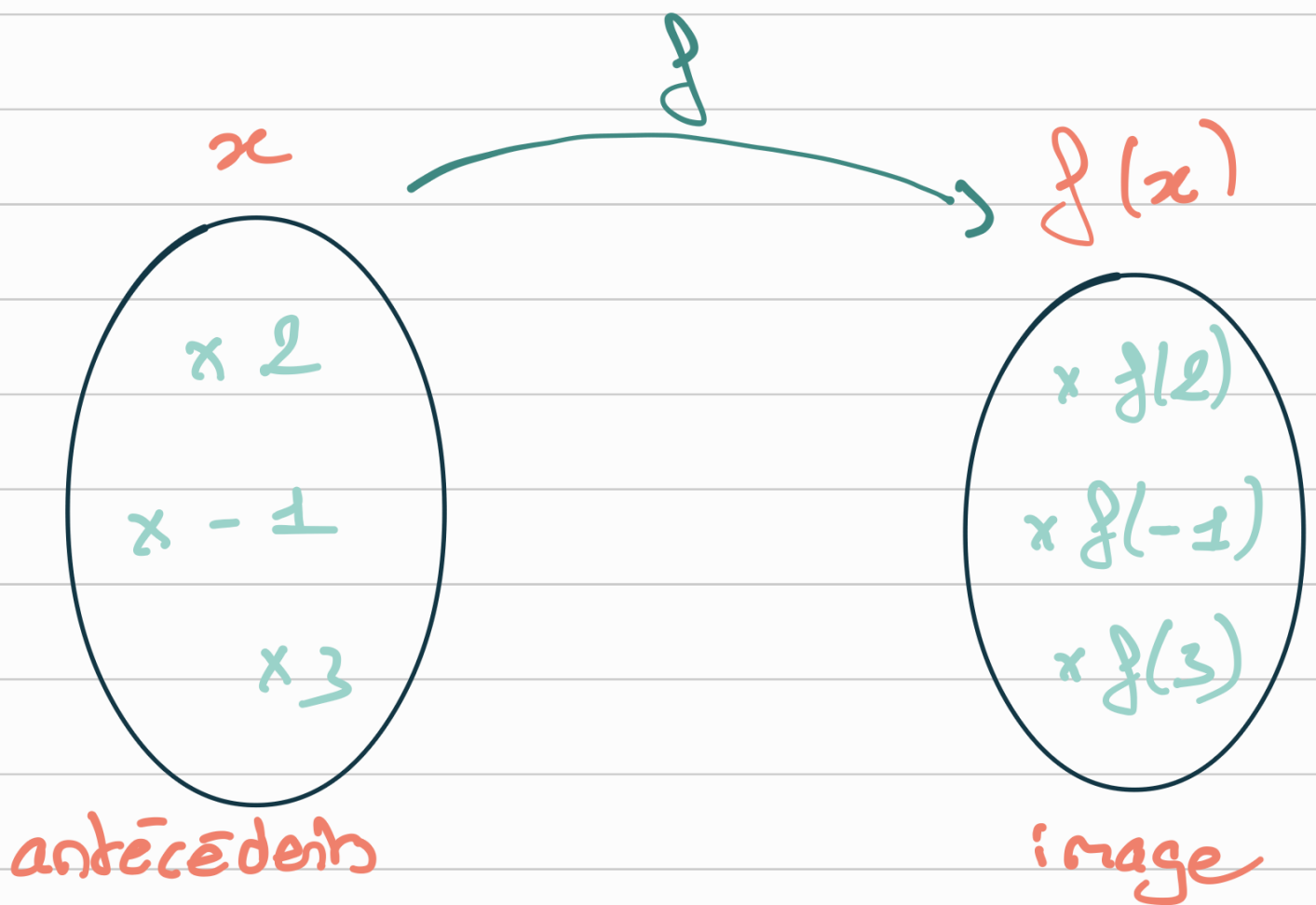


$$P(x) = 6x$$

$$f(x) = 3x + 2$$

$$\text{e, } f(2) = 3 \times 2 + 2 = 8$$

$f(2)$
↳ f' image



$$h(x) = 5x - 1$$

Calculer l'image de 3 par la fonction h .

$$\hookrightarrow h(3) = 5 \times 3 - 1 = 14.$$

Calculer l'image de 4 par la fonction f . $f(4) = 3 \times 4 + 2 = 14$

$$g(x) = 4x - 7$$

Trouver l'antécédent de
3 par g .

$$g(x) = 3$$

$$4x - 7 = 3$$

$$4x = 3 + 7$$

$$4x = 10$$

$$x = \frac{10}{4}$$

$$x = \frac{5}{2} = 2,5$$

- $3x + 1 = 2$

$$3x = 2 - 1$$

$$3x = 1$$

$$x = \frac{1}{3}$$

- $5x - 2 = 6$

$$5x = 6 + 2$$

$$5x = 8$$

$$x = \frac{8}{5} = 1,6.$$

- $f(x) = 2x - 3$

→ calcul l'image de -4 par f .

$$L, f(-4) = 2 \times (-4) - 3$$

$$= -8 - 3$$

$$= -11$$

→ détermine l'antécédent de 5 par f .

$$L, 2x - 3 = 5$$

$$2x = 5 + 3$$

$$2x = 8$$

$$x = \frac{8}{2} = 4$$

→ calcul d'image de 0 par f .

$$\hookrightarrow f(0) = 2 \times 0 - 3 = -3$$

→ détermine l'antécédent de 0 par f .

$$\hookrightarrow 2x - 3 = 0$$

$$2x = 0 + 3 = 3$$

$$x = \frac{3}{2}$$

$$x = 1,5.$$

3 familles

fonctions
affines

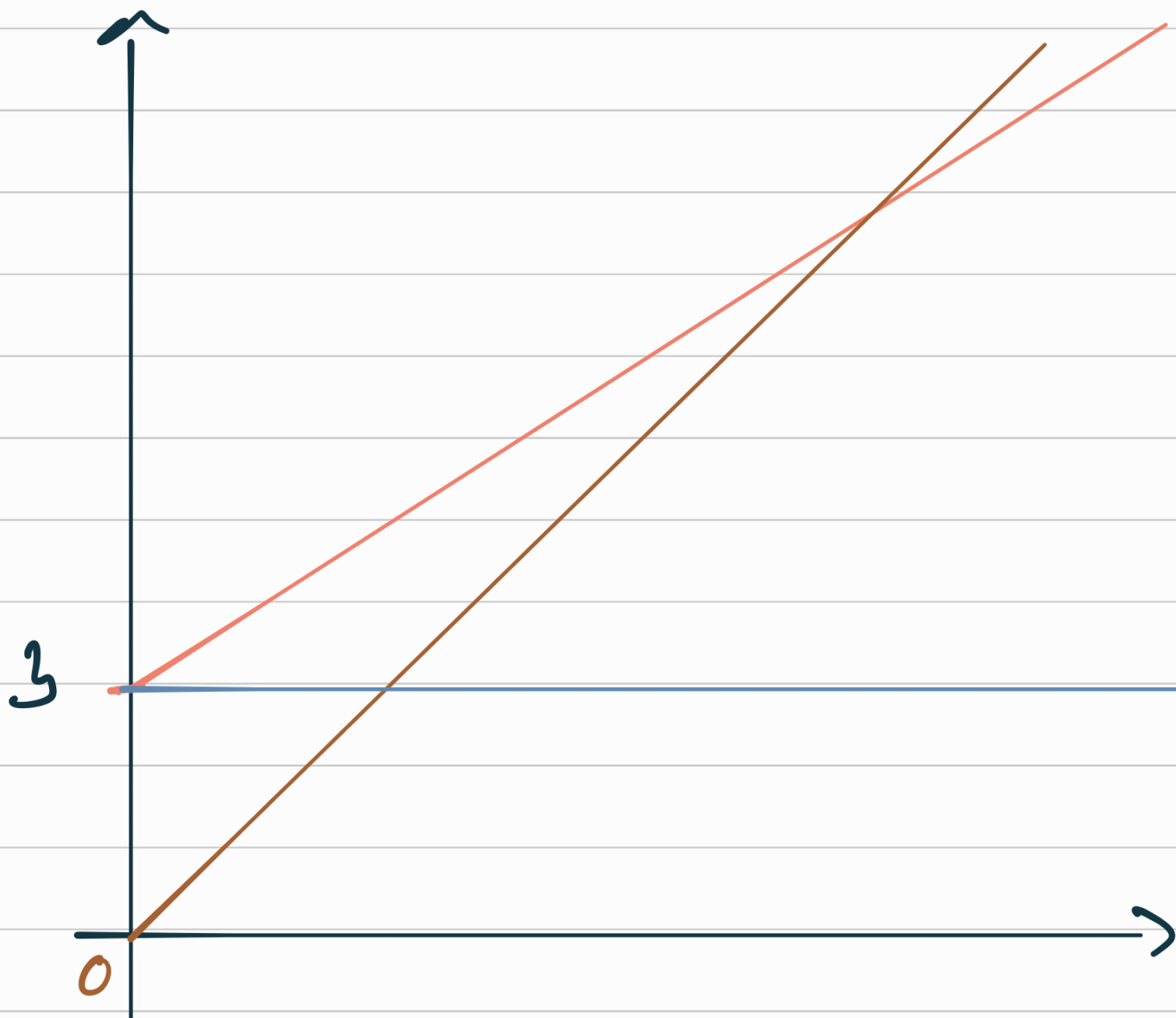
$$f(x) = ax + b$$

fonctions
linéaires

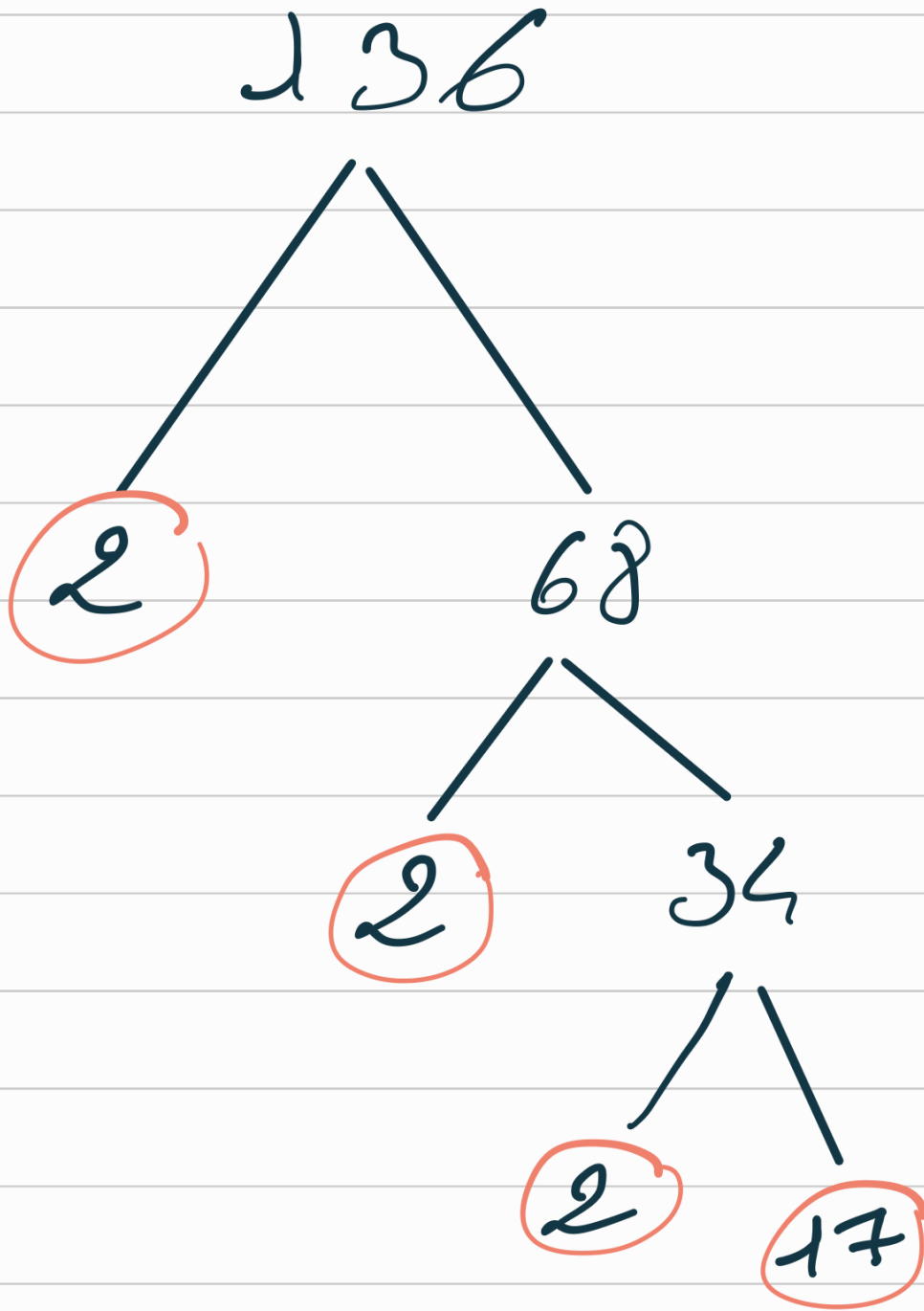
$$f(x) = ax$$

fonctions
constantes

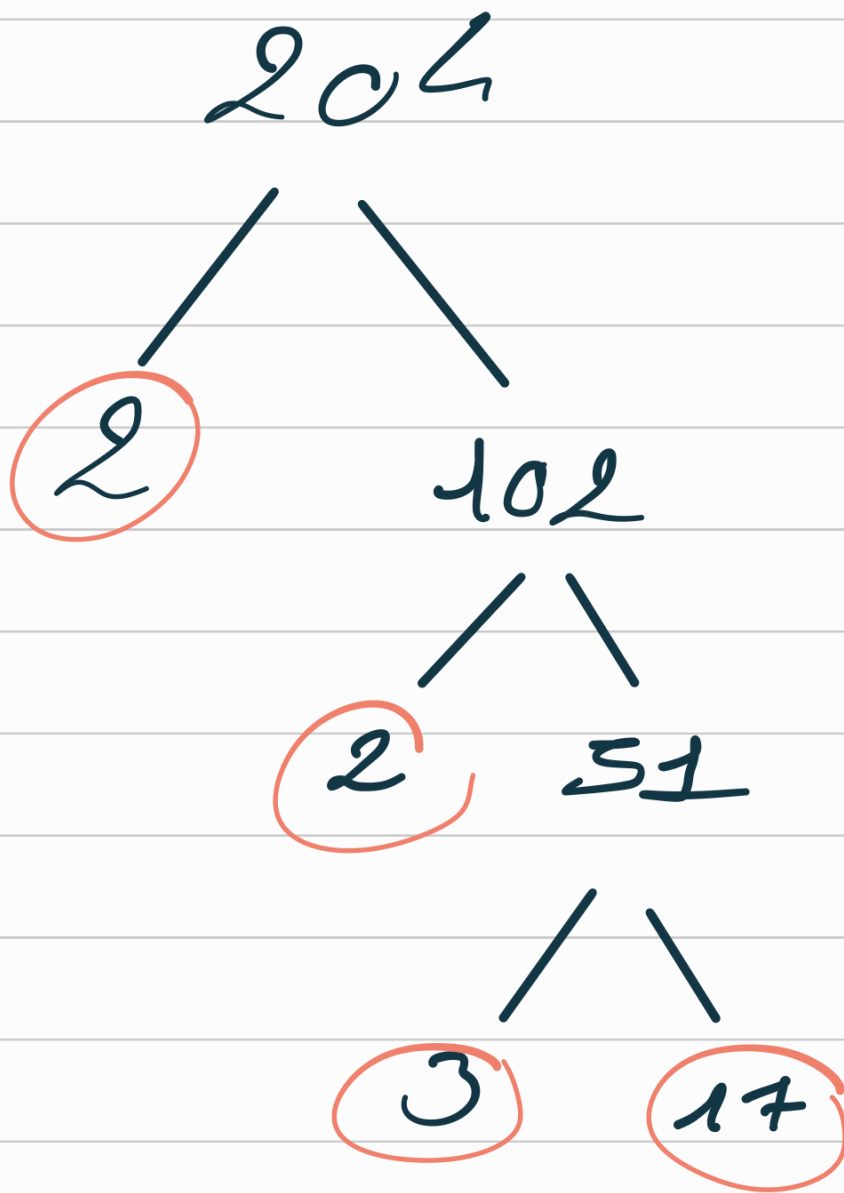
$$f(x) = b$$



Arithmétique



$$136 = 2 \times 2 \times 2 \times 17$$



$$204 = 2 \times 2 \times 3 \times 17$$

$$\frac{204}{136} = \frac{\cancel{2} \times \cancel{2} \times 3 \times \cancel{17}}{\cancel{2} \times \cancel{2} \times 2 \times \cancel{17}} = \frac{3}{2}$$

$$204 = 2 \times 2 \times 3 \times 17$$

$$136 = 2 \times 2 \times 2 \times 17$$

$$\text{PGCD}(204; 136) = 2 \times 2 \times 17 \\ = 68$$

$$\text{PPCM}(204; 136) = 2 \times 2 \times 2 \times 3 \times 17 \\ = 408.$$