05.10.22

2.2.7 Soit f, g et h trois fonctions définies par $f(x) = 2x$, $g(x) = 2x - 1$ et $h(x) = x^2$
Calculer :

a) $(f \circ g)(x)$ b) $(h \circ f)(x)$ c) $(g \circ h \circ f)(x)$

a) $ED(f) = \mathbb{R}$
$ED(g) = \mathbb{R}$
$ED(h) = \mathbb{R}$

$$f \circ g : \mathbb{R} \longrightarrow \mathbb{R}, \quad x \longmapsto 4x - 2$$

$$f \circ g(x) = f(g(x)) = f(2x-1) = 2(2x-1) = 4x - 2$$

b) $$h \circ f : \mathbb{R} \longrightarrow \mathbb{R}, \quad x \longmapsto 4x^2$$

$$h \circ f(x) = h(f(x)) = h(2x) = 4x^2$$

2.2.10 Tracer le graphe des fonctions suivantes :

a) $f(x) = 2$ Constante

b) $f(x) = \frac{2}{5}x$ $\quad m = \frac{2}{5} = \frac{\Delta y}{\Delta x}$

c) $f(x) = x + 4$

d) $f(x) = 3x - 6$

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

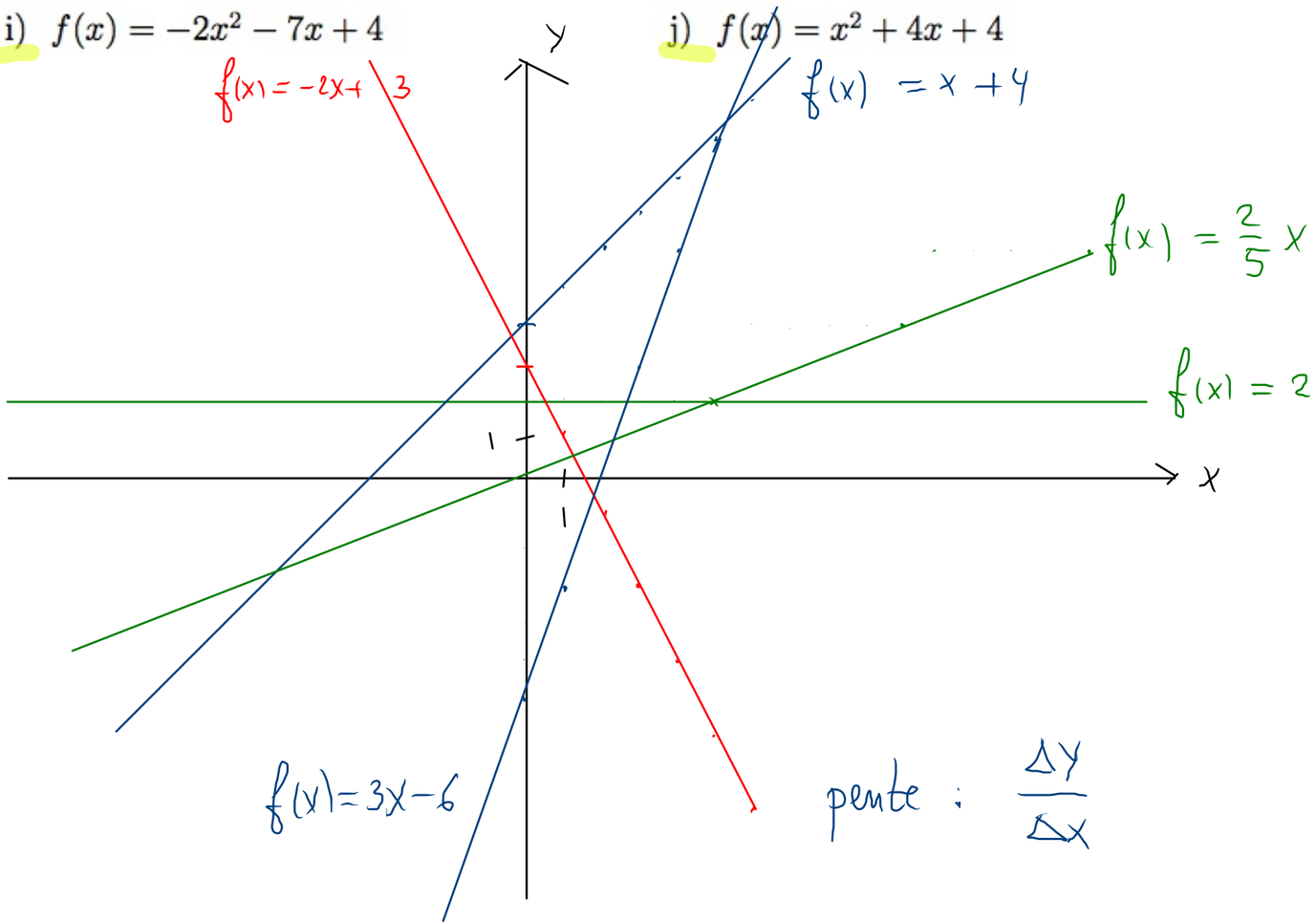
f) $f(x) = x^2 + x - 2$

g) $f(x) = 4 - x^2$

h) $f(x) = x^2 - 2x + 3$

i) $f(x) = -2x^2 - 7x + 4$

j) $f(x) = x^2 + 4x + 4$



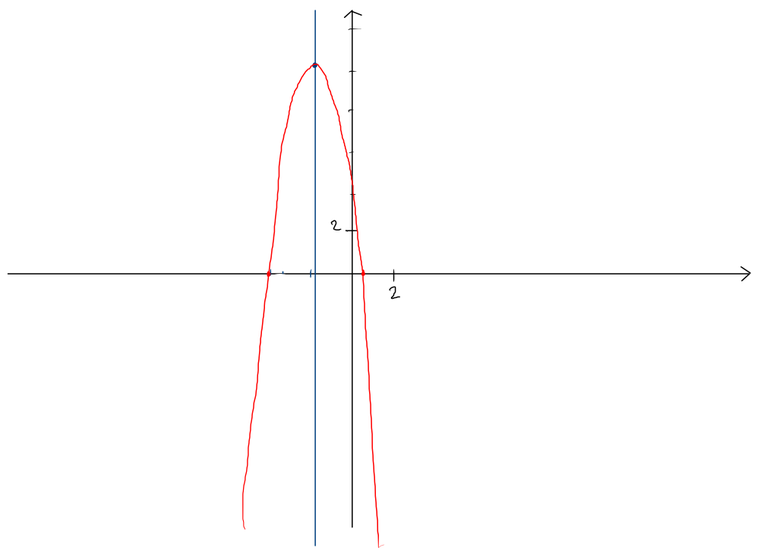
g) $f(x) = 4 - x^2$

i) $f(x) = -2x^2 - 7x + 4$

f) $f(x) = x^2 + x - 2$

h) $f(x) = x^2 - 2x + 3$

j) $f(x) = x^2 + 4x + 4$



i) $f(x) = -2x^2 - 7x + 4$ concave

Axe de symétrie : $x = \frac{-b}{2a} = \frac{7}{-4} = -1,75$

Sommet $f\left(-\frac{7}{4}\right) = -2 \cdot \frac{49}{16} + \frac{49}{4} + 4$

$= \frac{-98}{16} + \frac{196}{16} + \frac{64}{16} = \frac{162}{16} \cong 10$

$S(-1,75 ; 10,125)$

zéros : $-2x^2 - 7x + 4 = 0$

$2x^2 + 7x - 4 = 0$

$(2x - 1)(x + 4) = 0$

$\downarrow \quad \downarrow$

$\frac{1}{2} \quad -4$