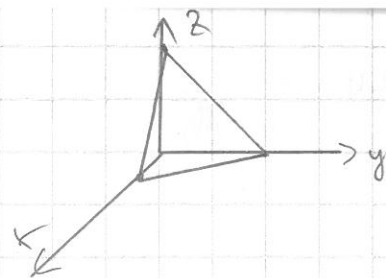


$$(0, y, 0): y - 2 = 0 \Leftrightarrow y = 2$$

$$(0, 0, z): z - 2 = 0 \Leftrightarrow z = 2$$



14.4 a) $6x - y + 2z = 4 \Leftrightarrow 2z = -6x + y + 4 \quad | :2$
 $\Leftrightarrow z = -3x + \frac{1}{2}y + 2 = f(x, y)$

b) $f(x, y) = -3x + \frac{1}{2}y + 2 = 0 \quad | \cdot 2 \Leftrightarrow y = 6x - 4$ more

Kyseessä on tason $6x - y + 2z = 4$ ja xy -tason leikkaussuora

14.6 $f(x, y) = \sqrt{2x - y^2} - \sqrt{10 - 3x - y}$

a) 1^o $2x - y^2 \geq 0$ $\hat{=}$
 Vast. ylitulo:
 $2x - y^2 = 0 \Leftrightarrow x = \frac{1}{2}y^2$
 aikealle alueelle $\uparrow$ parabeli

Testipisteet

$(-1, 0): 2 \cdot (-1) - 0^2 \geq 0 \quad \downarrow$

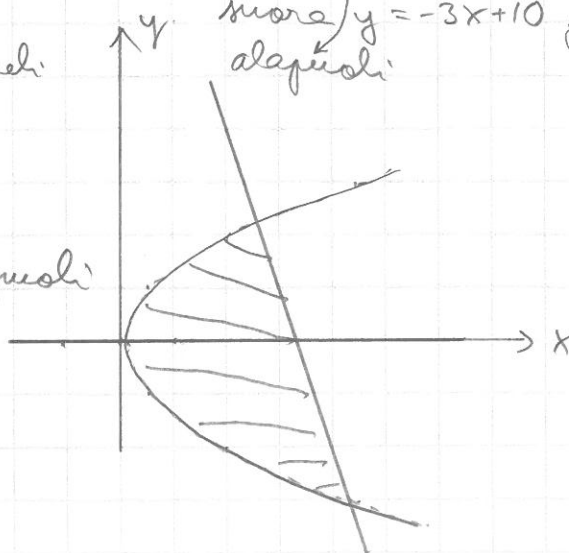
$(1, 0): 2 \cdot 1 - 0^2 \geq 0 \quad \uparrow$

parabeli $\hat{=}$ sen oikea puoli

2^o $10 - 3x - y \geq 0$

$\Leftrightarrow y \leq -3x + 10$

more $y = -3x + 10$ $\hat{=}$ sen alapuoli



15. Oskittainderivaatat

$f = f(x, y)$

$\partial_x f(x, y)$: derivaatan x :n suhteen, y vakio (TAI: $D_x f(x, y), f'_x(x, y)$)

$\partial_y f(x, y)$: $—$ y $—$ x $—$ (TAI: $D_y f(x, y), f'_y(x, y)$)

Esim. $f(x, y) = 5xy + x^2 - y^4$

$f'_x(x, y) = 5y + 2x$

$\Rightarrow f'_x(1, 2) = 5 \cdot 2 + 2 \cdot 1 = 12$

$f'_y(x, y) = 5x - 4y^3$

$\Rightarrow f'_y(1, 2) = 5 \cdot 1 - 4 \cdot 2^3 = -27$