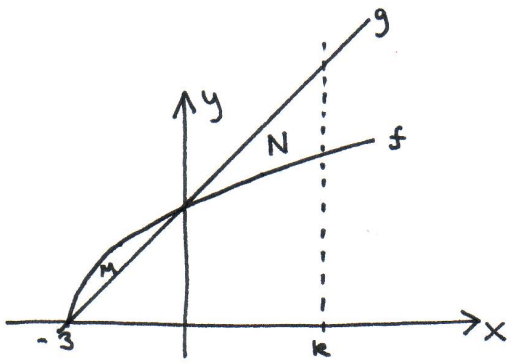
opg.13



$f(x) = \sqrt{3x+9}$

$g(x) = x+3$

a) Areal af M (A_M):

$$A_M = \int_{-3}^{0} (\sqrt{3x+9} - (x+3))\,dx$$

$\int(\sqrt{3x+9} - (x+3), x, -3, 0)$ giver $\frac{3}{2}$.

Dvs. $\underline{\underline{A_M = \frac{3}{2}}}$

b) For $k > 0$ afgrænser f og g et område N med linje $x = k$.

Find k, så $A_M = A_N$:

$$\frac{3}{2} = \int_{0}^{k} ((x+3) - \sqrt{3x+9})\,dx$$

SOLVE $(\frac{3}{2} = \int((x+3) - \sqrt{3x+9}, x, 0, k), k)$ giver

$k \neq -3$ v $k = \frac{7}{3}$

Dvs. for $\underline{\underline{k = \frac{7}{3}}}$ er $\underline{\underline{A_M = A_N}}$