$y e^{\sin x} = C \quad / : e^{\sin x}$

$y = \frac{C}{e^{\sin x}}$

$y = Ce^{-\sin x}$ setter inn $(0,4)$

$4 = Ce^{0}$

$4 = C \cdot 1$

$C = 4$

$\underline{\underline{y = 4e^{-\sin x}}}$

---

i) 1a) $a_2 = 2 \quad a_6 = 162$

(I) $a_2 = a_1 \cdot k = 2$

(II) $a_6 = a_1 \cdot k^5 = 162$

(I) $a_1 = \frac{2}{k}$ settes inn i

(II) $\frac{2}{k} \cdot k^5 = 162$

$2k^4 = 162 \quad / : 2$

$k^4 = 81$

$k^4 = 3 \cdot 3 \cdot 3 \cdot 3 \quad \vee \quad k^4 = (-3)(-3)(-3)(-3)$

$k = \sqrt[4]{3 \cdot 3 \cdot 3 \cdot 3} \qquad k = \sqrt[4]{(-3)^4}$

$\underline{\underline{k = 3}} \quad \vee \quad \underline{\underline{k = -3}}$

positiv k:

$a_2 = a_1 \cdot k$

$2 = a_1 \cdot 3 \quad / : 3$

$\underline{\underline{a_1 = \frac{2}{3}}}$

negativ k:

$\underline{\underline{a_1 = -\frac{2}{3}}}$

1b) $a_n = a_{n-2} + a_{n-1}$

$\ldots, \ldots, a_{n-2}, a_{n-1}, a_n, \ldots$

tja. $\frac{a_{n-1}}{a_{n-2}} = k \qquad \frac{a_n}{a_{n-1}} = k$

$a_{n-2} = \frac{a_{n-1}}{k} \qquad a_n = k \cdot a_{n-1}$

setter inn i $a_n = a_{n-2} + a_{n-1}$

$k \cdot a_{n-1} = \frac{a_{n-1}}{k} + a_{n-1} \quad \Big| : a_{n-1}$

$k = \frac{1}{k} + 1 \quad / \cdot k$

$k^2 = 1 + k$

$k^2 - k - 1 = 0$

$a = 1 \quad b = -1 \quad c = -1$

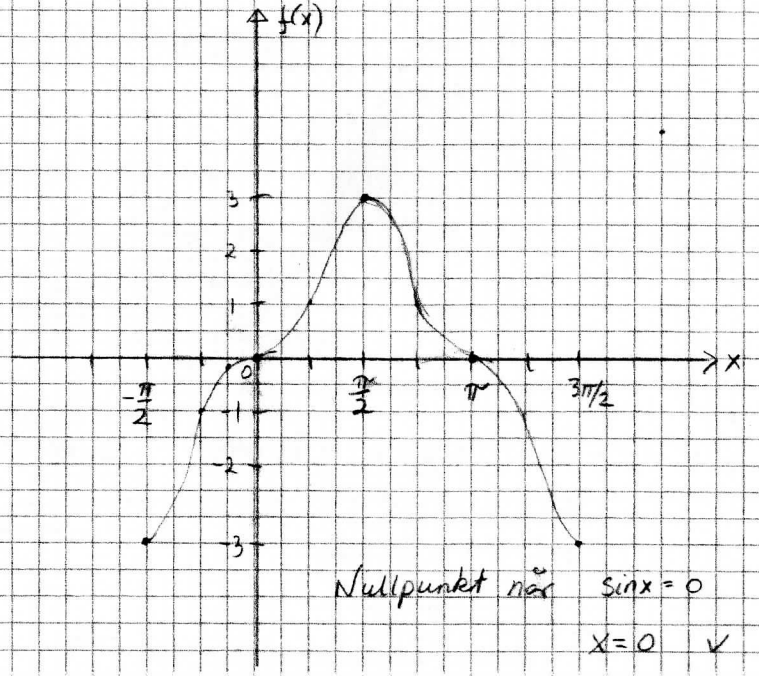
$k = \frac{1 \pm \sqrt{1 - 4 \cdot 1 (-1)}}{2 \cdot 1} = \frac{1 \pm \sqrt{1+4}}{2}$

$k = \frac{1 \pm \sqrt{5}}{2}$, to løsninger $\underline{\underline{k = \frac{1+\sqrt{5}}{2}}} \quad \vee \quad \underline{\underline{k = \frac{1-\sqrt{5}}{2}}}$

Del 2, med hjelpemidler

(2) $f(x) = 3(\sin x)^3 \qquad x \in \left[-\frac{\pi}{2}, \frac{3\pi}{2}\right]$

a)



Nullpunkt når $\sin x = 0$

$x = 0 \quad \vee \quad x = \pi$