ANA UN3 3) ZZ: exp: C -> C, cs: C -> C, sin: C -> C sind holomorph exp(x+iy) = exp(x)(as(y) + i sinly) = exp(x)as(y)+i exp(x)sin(y) d Relexp) = d exp(x).cos(y) = exp(x).cos(y) dinlexp = d exp(x). sin(y) = exp(x) cos(y) d Relexp) = d exp(x) cs(y) = exp(x) sin(y) $\frac{\partial \operatorname{Im}(\exp)}{\partial x} = \frac{\partial}{\partial x} \exp(x) \sin(y) = -\exp(x) \sin(y)$ (exp(x+iy)) = exp(x+iy) ... steling => holomorph Stammfunktion:exp cos (x+iy)=cos (x)cos (iy)-sin(x): cin(iy) = cos (x) cosh(y)-icin(x) cinh(y) dretas) = of cos(x). coshly) = -sin(x). coshly) = of -sin(x). cinhly) = dlm(cos dre(ss) = d cos(x) cosh(y) = cos(x) sinh(y) = -dx - sin(x) sinh(y) = -dx (cos(xtiy))'= -sin(xtiy)...stelig = sholomorph Stammfunktion: sin sin(x+iy) = sin(x) cos(iy) + cos(x) sin(iy) = sin(x) cosh(y)+i cos(x) sin(y) The (sin) = of sin(x) ash(y) = cos(x) sxl(y) = of cos(x) sinh(y) = of m(sin) ore (sin) = of sin(x) cosh(y)=-sin(x) sinh(y) = - ox cos(x) sinh(y) = -ox (an(xeig)) - as (x+ig) ... steling = sholomorph Sternyfunktion: -ss ges: Stammfuntion von 22 (cos (2))2 [2 (cos(2))2 dz = 52 2 (cos(27)+1) dz = = (52 cos(22) dz + 52 dz $=\frac{1}{2}\int \left(\frac{\sin(2z)}{2}\right)^{\frac{1}{2}} z^{2} dz + \frac{1}{2}\frac{z^{3}}{3} = \frac{1}{2}\left(\frac{\sin(2z)}{2}\right) z^{2} - \int \frac{\sin(2z)}{2} \cdot 2z dz + \frac{2^{3}}{6}$ = 23 + 22 sin(22) - 25 sin(22) · 2 d2 - 23 + 22 sin(22) 15(-cos (22)) · 2 d2 $=\frac{\xi^3}{6} + \frac{\xi^2 \sin(2\xi)}{4} + \frac{\cos(2\xi)}{4} + \frac{1}{\xi} + \frac{1}{\xi} + \frac{\cos(2\xi)}{2} d\xi = \frac{\xi^3}{6} + \frac{\xi^2 \sin(2\xi)}{4} + \frac{\xi \cos(2\xi)}{4} - \frac{1}{\xi} \int \cos(2\xi) d\xi$ $= \frac{2^{3}}{6} + \frac{2^{2} \sin(2z)}{4} + \frac{2 \cos(2z)}{4} - \frac{4}{9} \int \cos(\omega) \frac{1}{2} d\omega \qquad \qquad \int \omega = 2 \frac{1}{2} d\omega = 2 d\omega = \frac{1}{2} d\omega$ $= \frac{2^{3}}{6} + \frac{2^{2} \sin(2z)}{4} + \frac{2 \cos(2z)}{4} - \frac{1}{9} \sin(\omega) = \frac{2^{3}}{6} + \frac{2^{2} \sin(2z)}{4} - \frac{1}{2} \sin(2z) = \frac{1}{2} d\omega$ (62²-3) cin(2z) +62 cos(22) +423