3.) Z, WE C 27: KEZ cos(2+KT) = (-1) K. cos(2) cos(2+KT) = exp(i2+iKT) + exp(-i2-iKT) = exp(i2).exp(ikT)+ exp(i2) exp(ikT) = (exp(iz) · exp(in) + exp(iz) · exp(-in) k). 2 = exp(iz) · (-1) k texp(-iz) · (-1) k = (-1) K exp(iz) + exp(-iz) = (-1) K · cos(2) 22: KEZL sin(2+k71) = (-1) K. sin(2) $sin(z+k\pi) = \frac{e \times p(iz+ik\pi) - e \times p(-iz-ik\pi)}{2i} = \frac{e \times p(iz) \cdot e \times p(ik\pi) - e \times p(-iz) \cdot e \times p(-ik\pi)}{2i}$ $= \exp(iz) \cdot (-1)^{k} - \exp(-iz) \cdot (-1)^{k} = (-1)^{k} \cdot \sin(z)$ 22: cos (2-2) = sin(2) $\cos(\frac{\pi}{2}-2) = \exp(i\frac{\pi}{2}-i2) + \exp(-i\frac{\pi}{2}+i2) = \exp(i\frac{\pi}{2})\exp(-i\frac{\pi}{2})\exp(-i\frac{\pi}{2})\exp(i2)$ = $\frac{i \cdot \exp(-iz) + (-i) \cdot \exp(iz)}{= -\exp(-iz) + \exp(iz)} = \sin(z)$

ANA O1 3.) ... ZZ: Sin (= -2) = cos(Z) sin(#-2) = exp(i#-iz) - exp(i# + iz) = exp(i=).exp(-i=) - exp(-i=).exp(i=) i. exp(-iz) - (-i). exp(iz) = i. (exp(-iz) + exp(iz)) = exp(iz) + exp(-iz) = cas(z) $77: cos(27) = (cos(2))^2 - (cin(2))^2$ (cos(z))2-(sin(z))2 = (exp(iz)+exp(-iz))2 (exp(iz)-exp(iz))2 [(exp(iz))2+2exp(iz)exp(-iz)+(exp(-iz))2 (exp(iz)-exp(-iz))2 exp(i2z)+2 exp(iz-iz) + exp(-i2z) + (exp(iz))2-2 exp(iz) exp(-iz)+(exp(-iz))2 exp(i2=)+2+exp(-i2=)+exp(i2=)-2exp(i2-i2)+exp(-i2=) = 2 exp(i2z)+2 exp(-i2z)+2-2 = exp(i2z)+exp(-i2z) = cos (27) 22: Sin (22) = 2 Sin (2): cos(2) 2 sin(z) cos(z) = 2 expliz) expl-iz) expliz) + expl-iz) (expliz) - expliz) (expliz) respliz) = (exp(iz)2 + exp(iz) exp(-iz) - exp(-iz) exp(iz) - (exp(-iz))2 $= e + p(i2z) + 1 - 1 - e \times p(-i2z) = sin(2z)$ 21