E PAPMOLES O. ONOKA. YTTONOLITEN

T. Topwoperpika o so kanpulpara

Orokanpulpara the popens

PR (cost, sint)dt,

onou R (u, v) ouvaipenon 2 perabancuiv

u, v.

To oroka. (1) peraeximparijeran of

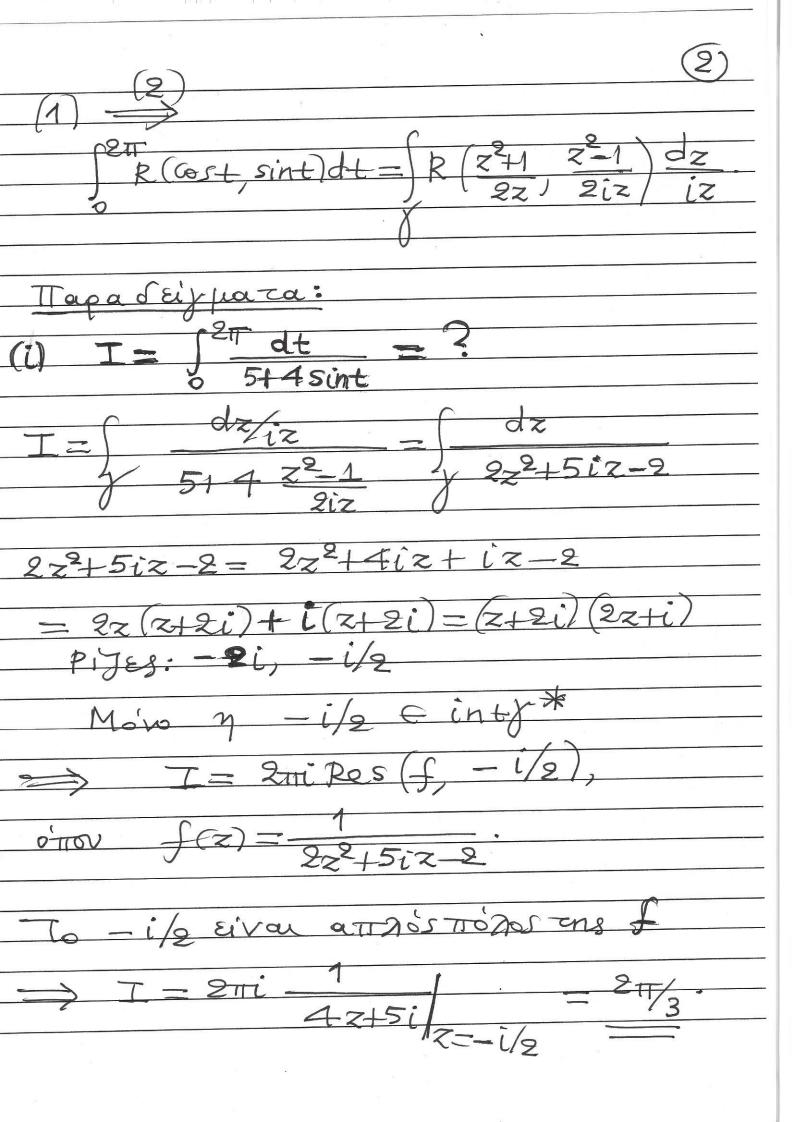
puradikio oroka. Traine orok kinso

y (t) = eit, te To, 277

ws efins:

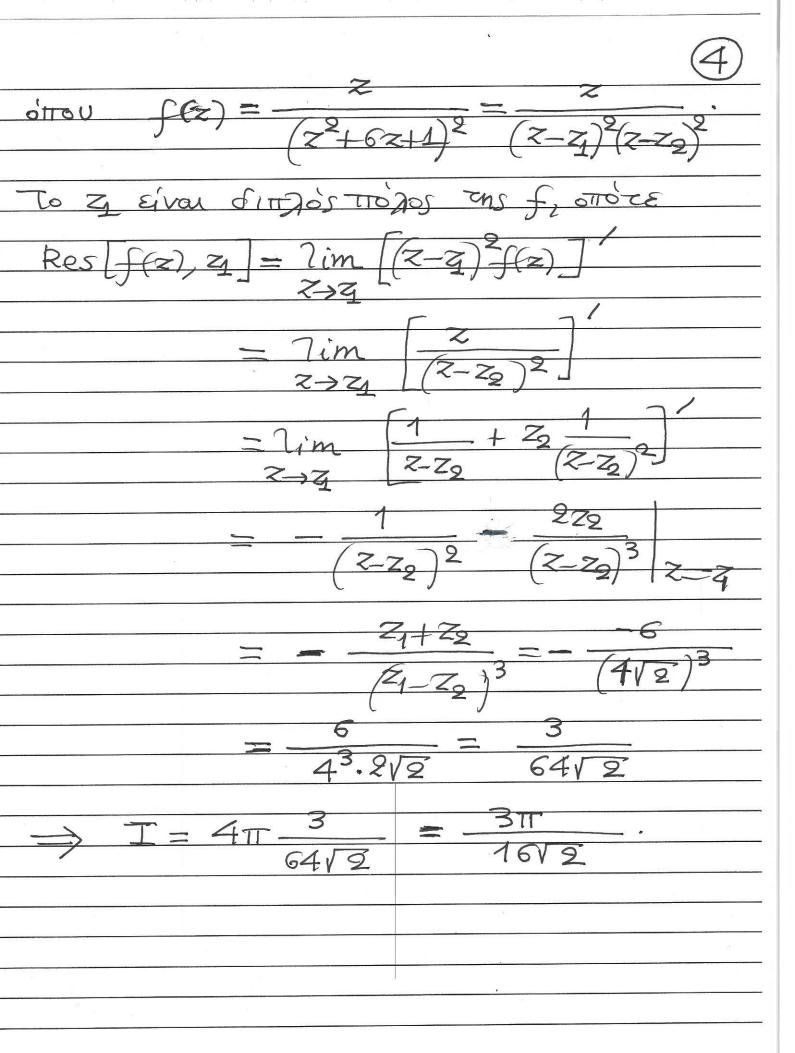
Oetoupe
$$z = eit$$
, orrote $z = 1/2 k$
 $cost = Re(z) = \frac{z+z}{2} = \frac{1}{2}(z+\frac{1}{2})$,

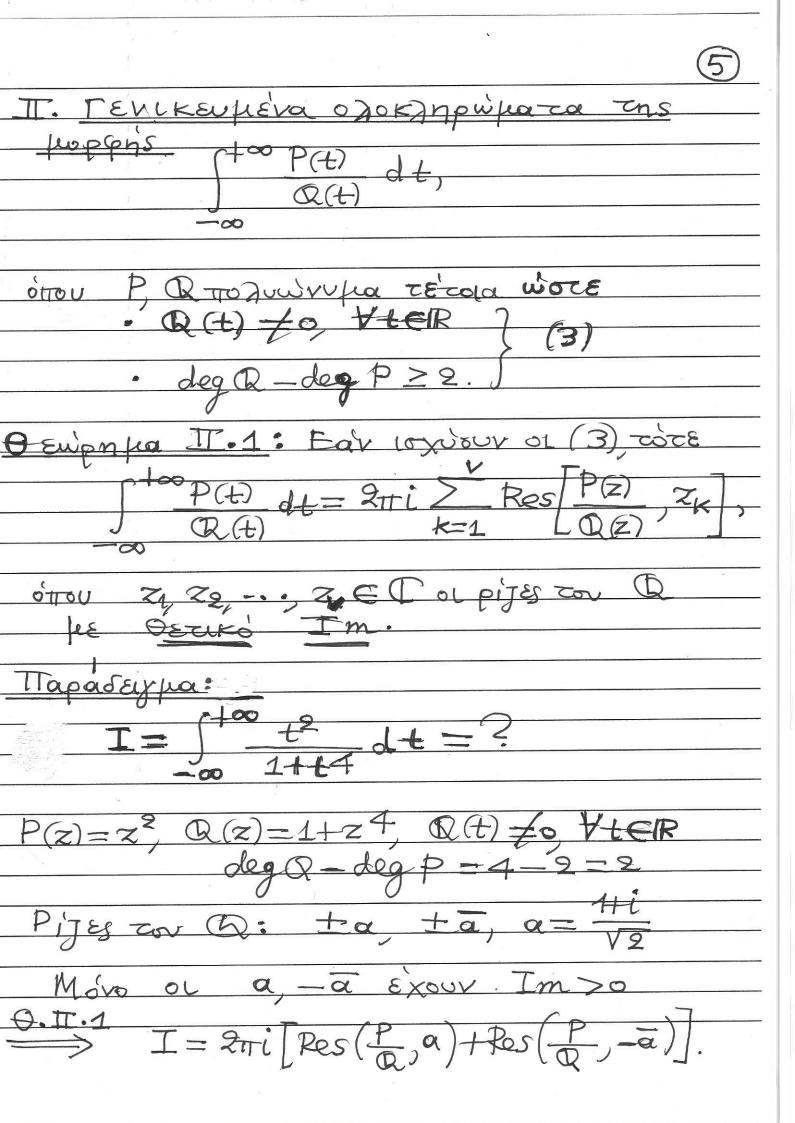
 $sint = \frac{1}{i} Im(z) = \frac{z-z}{2} = \frac{1}{2}(z+\frac{1}{2})$
 $dz = ieit dt = izdt$
 $cost = \frac{z^2+t}{2iz}$
 $dt = \frac{z^2-t}{2iz}$

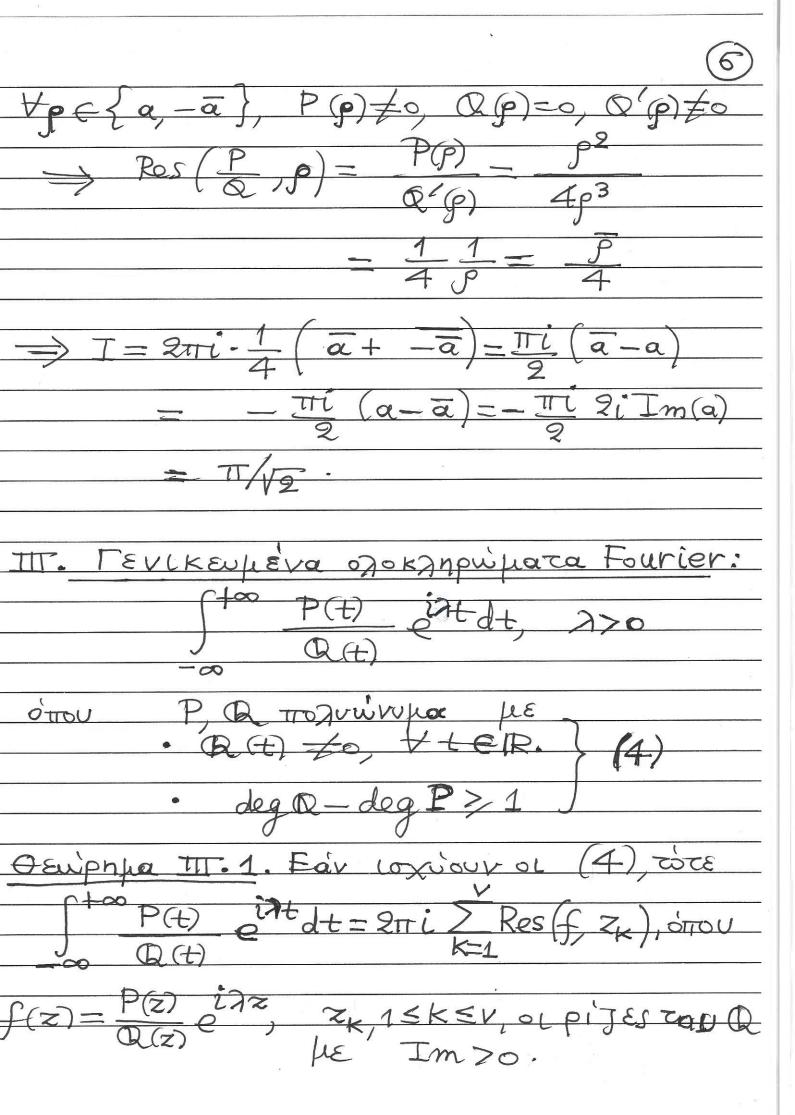


(ii)
$$I = \int \frac{dt}{dt} = \frac{2}{3}$$

Fival $\int \frac{2\pi}{dt} dt = \frac{3}{5} = 2\pi - t \int (-ds)$
 $I = \int \frac{2\pi}{3 + \omega s + 2} = I$
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 $I = \int \frac$







Mapa d'Eigha ca:

(i)
$$T = \int_{-\infty}^{+\infty} \cos(\pi t) dt = ?$$

$$Q(z) = 0 \Leftrightarrow z = \alpha , \overline{\alpha}, a = 1 + i.$$

$$=2\pi i - \frac{ei\pi a}{2(a-1)} = \pi i - \frac{\pi(-141)}{2(a-1)}$$

$$\Rightarrow I = -\pi e^{\pi}$$

 $\frac{\text{(ii)}}{\text{I}} = \int_{-\infty}^{+\infty} t^3 \sin t \, dt = ?$ $T = Im(J), \quad J = \int_{-\infty}^{+\infty} \frac{1}{(1+t^2)^2} e^{it} dt.$ $P(z) = z^3$, $Q(z) = (1+z^2)^2$, deg Q - deg P = 1. Pijer zor D: ±i, Im(i) 20 \Rightarrow J=2 πi Res(f(z), i), $o\pi o v$ $f(z) = \frac{z^3 e^{tz}}{(1+z^2)^2} \cdot \text{To i sivan dinthos modes}$ $Res(f,i) = \lim_{z \to i} \left(z - i \right)^2 \frac{z^3 e^{iz}}{\left(z - i \right)^2 \left(z + i \right)^2}$ $= \lim_{z \to i} \left[\frac{z^3 e^{iz}}{(z+i)^2} \right]$ = (322eiz + iz3eiz)(z+i)-?zeiz $z^{2}e^{iz}[(3+iz)(z+i)-2z],$ (Z-1i)3 | Z=i = 1/40 KATT - . . .