Three methods for boundary integrals of circle

	$\oint \frac{1}{1+p^2-2p\cos q}dq$	$\oint \frac{\cos 2q}{1+p^2-2p\cos q}dq$	$\oint \frac{1-p\cos q}{1+p^2-2p\cos q}dq$	$\oint \frac{\sin q}{1+p^2-2p\cos q}dq$	$\oint \ln\sqrt{\left(1+p^2-2p\cos q\right)}dq$
$\lvert p\rvert<1$	$\frac{2p}{1-p^2}$	$\frac{2p\, p^2}{1-p^2}$	$2p$	0	0
$\lvert p\rvert>1$	$\frac{2p}{p^2-1}$	$\frac{2p}{p^4-p^2}$	0	0	$2p \ln p$

Method 1： Residue theory $\cos q=\frac{1}{2}\left(z+z^{-1}\right)$, $\sin q=\frac{1}{2i}\left(z-z^{-1}\right)$

Method 2： Degenerate kernel in potential theory (U,T,L,M)

Method 3： Poisson integral formula $u(r,f)=\frac{1}{2p}\int_0^{2p}\frac{\left(R^2-r^2\right)f(q)}{R^2+r^2-2Rr\cos(q-f)}dq$

Complex, Degenerate and Poisson Formula .doc by tashi