| Assume |
| --- |
| $t(s) = p_0 + \sum_{m=1}^{\infty} p_n \cos n\theta + q_n \sin n\theta$ |
| $\rho \to 1^+$ |
| $0 = \int_0^{2\pi} \left[ \sum_{m=1}^{\infty} m \frac{R^{m-1}}{\rho^m} \cos m(\theta - \phi) \right] \cos 2\theta d\theta$ |
| $-\int_0^{2\pi} \left[ \frac{1}{\rho} + \sum_{m=1}^{\infty} \frac{R^m}{\rho^{m+1}} \cos m(\theta - \phi) \right] \left( p_0 + \sum_{m=1}^{\infty} p_n \cos n\theta + q_n \sin n\theta \right) d\theta$ |
| **Compare with coefficients** |
| $p_0 = 0$, $p_2 = 2$, $q_n = 0$ |
| $\therefore t(s) = 2\cos 2\theta$ |
| $u(x) = \int_{B^+} T(s,x) \phi(s) dB(s), \quad x \leftarrow D$ |
| **Set** |
| $s = (2,\theta)$, $x = (1,\phi)$ |
| $\cos 2\phi = \int_0^{2\pi} \left[ \frac{1}{2} + \sum_{m=1}^{\infty} \frac{1}{2^{m+1}} \cos m(\theta - \phi) \right] \left( a_0 + \sum_{m=1}^{\infty} a_n \cos n\theta + b_n \sin n\theta \right) d\theta$ |
| **Compare with coefficients** |
| $a_0 = 0$, $a_2 = \frac{8}{\pi}$, $b_n = 0$ |
| $\phi(s) = \frac{8}{\pi} \cos 2\theta$ |
| $u(x) = \int_0^{2\pi} \left[ \frac{1}{2} + \sum_{m=1}^{\infty} \frac{\rho^m}{2^{m+1}} \cos m(\theta - \phi) \right] \left( \frac{8}{\pi} \cos 2\theta \right) d\theta = \rho^2 \cos 2\phi$ |

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