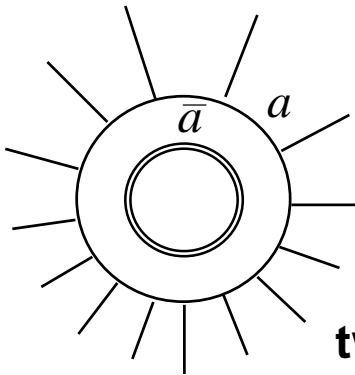


one dimensional problem

single layer:  $\cos(k\bar{a}) = 0$

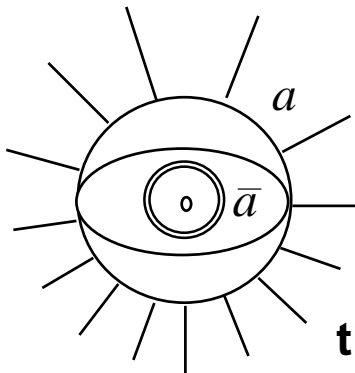
double layer:  $\sin(k\bar{a}) = 0$



two dimensional problem

single layer:  $J_n(k\bar{a}) = 0$

double layer:  $J_n'(k\bar{a}) = 0$



three dimensional problem

single layer:  $j_n(k\bar{a}) = 0$

double layer:  $j_n'(k\bar{a}) = 0$