

HOMEWORK 4- JUNE 2023

Using two-group theory, determine the critical core width of a slab reactor with core composition like that of a PWR and surrounded by an infinite water reflector. Use the following data for the core:

	Core		Reflector	
	Fast	Thermal	Fast	Thermal
$\nu\Sigma_F$	0.008476	0.18514	0	0
Σ_A	0.01207	0.121	0.0004	0.0197
D	1.2627	0.3543	1.13	0.16
Σ_R	0.02619	0.121	0.0494	0.0197

Other data:

- Fast fission factor over all energies = 1.27
- Reference PWR diameter = 340 cm
- Reference PWR height = 370 cm