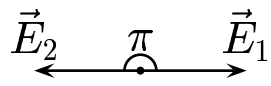
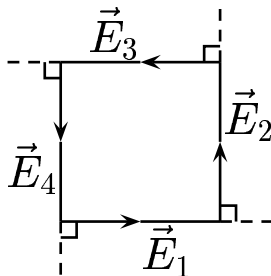


# of slit	1st min. angle	Phasor diagram
2-slit	$\phi_1 = \pi$	
4-slit	$\phi_1 = \frac{\pi}{2}$	

From the 2-slit and 4-slit cases, use deduction to determine ϕ_1 for the N -slit case.

- A) For the N -slit case, $\phi_1 = \left(\frac{N}{2}\right) \pi$.
- B) For the N -slit case, $\phi_1 = \pi$.
- C) For the N -slit case, $\phi_1 = \left(\frac{1}{4} - \frac{N}{16}\right) \pi$.
- D) For the N -slit case, $\phi_1 = \frac{2\pi}{N}$.

For the 2-slit, $2\phi_1 = 2\pi$, $\phi_1 = \pi$;
 For the 4-slit, $4\phi_1 = 2\pi$, $\phi_1 = \frac{\pi}{2}$, \dots
 For the N -slit, $N\phi_1 = 2\pi$, or $\phi_1 = \frac{2\pi}{N}$.

Answer **D**.