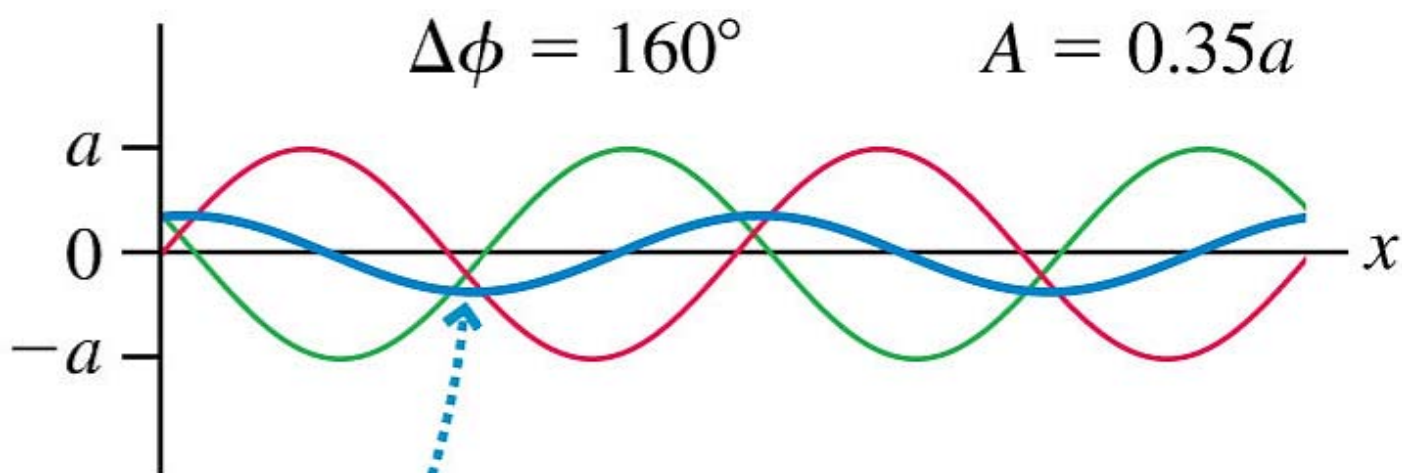
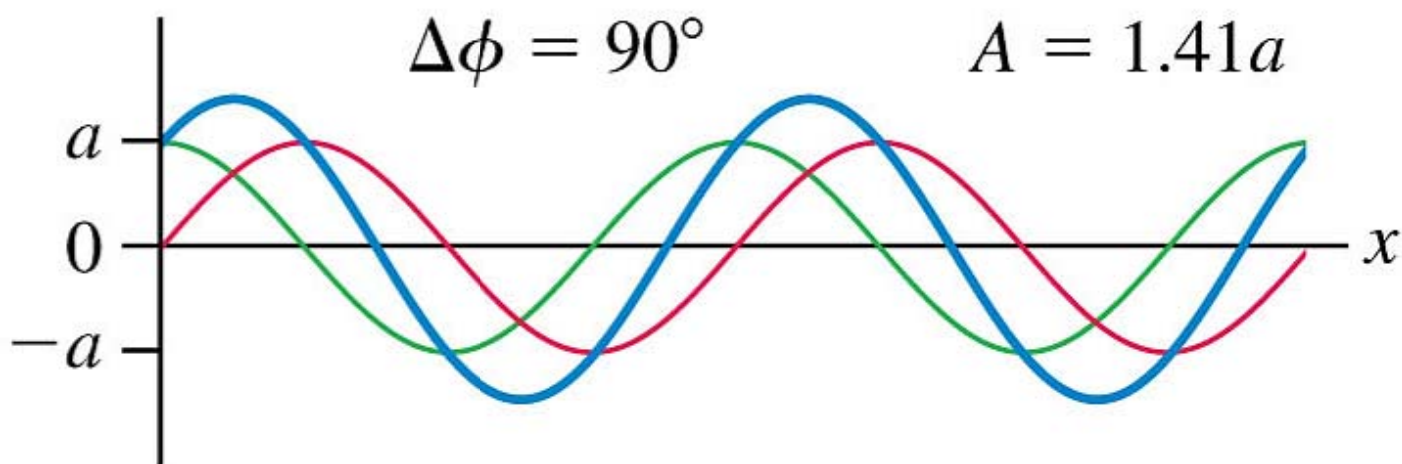
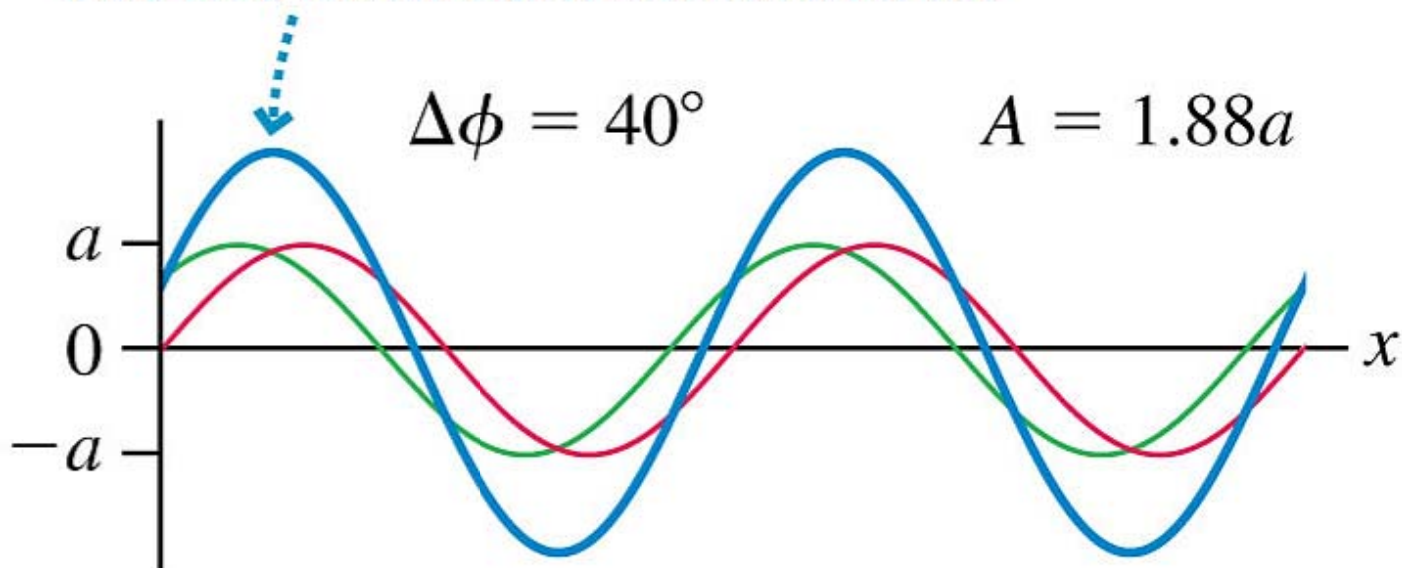


For $\Delta\phi = 40^\circ$, the interference is constructive but not maximum constructive.



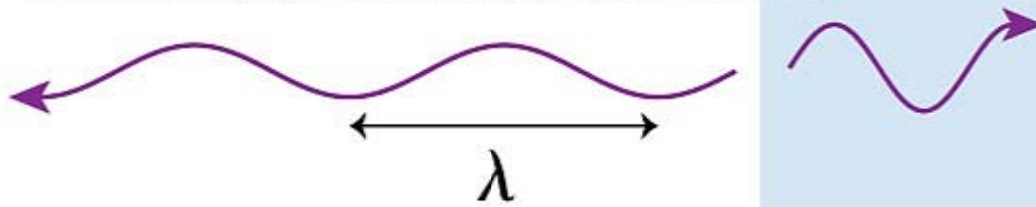
For $\Delta\phi = 160^\circ$, the interference is destructive but not perfect destructive.

Air

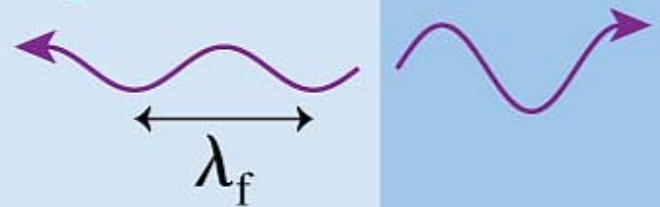
1. Incident wave approaches the first surface.



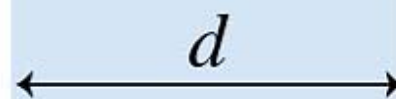
2. Part of the wave reflects back with a phase shift of π rad, part continues on into the film.



3. Part of the transmitted wave reflects at the second surface, part continues on into the glass.



4. The two reflected waves are overlapped and interfere.

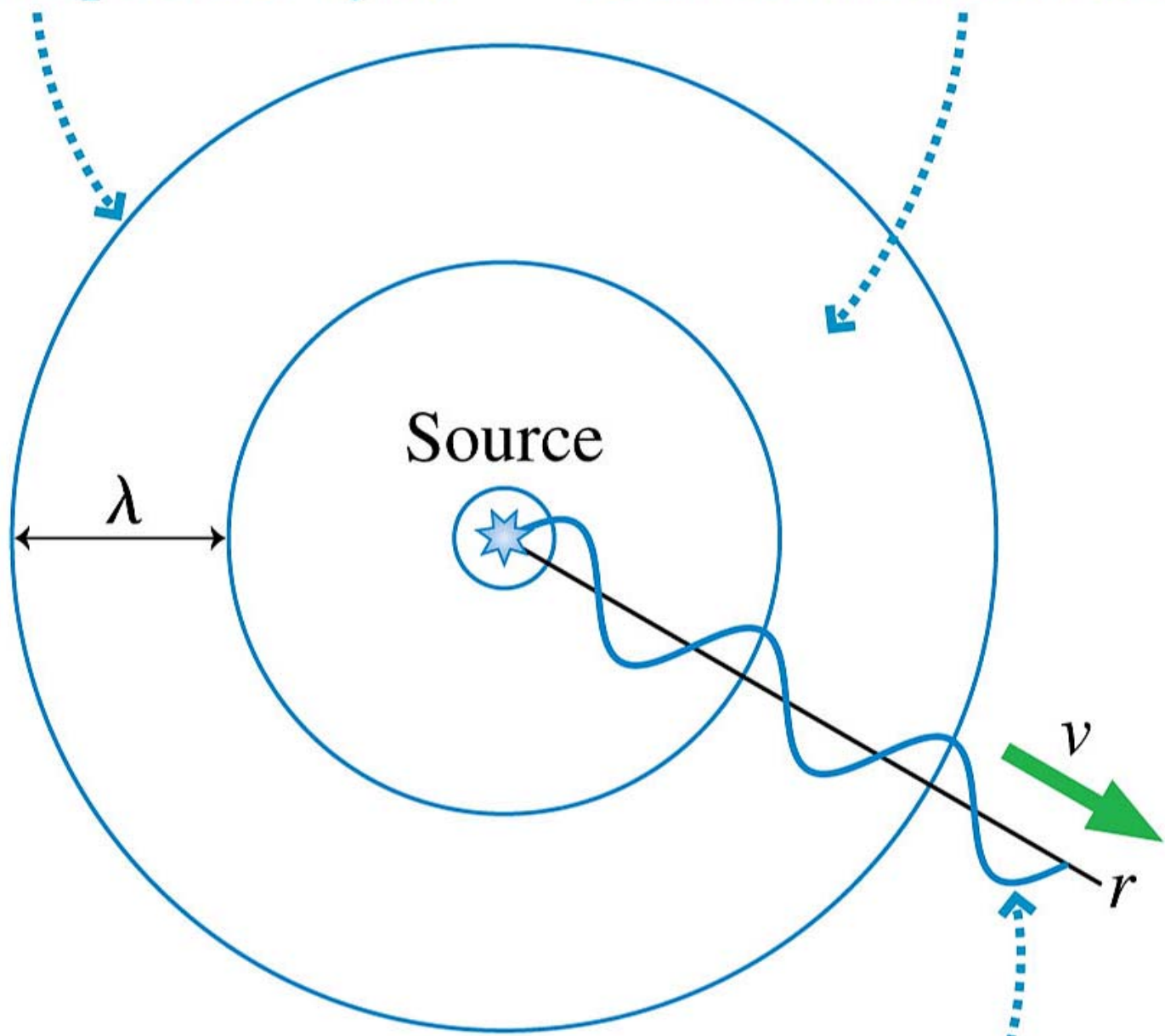


Thin film
Index n

Glass

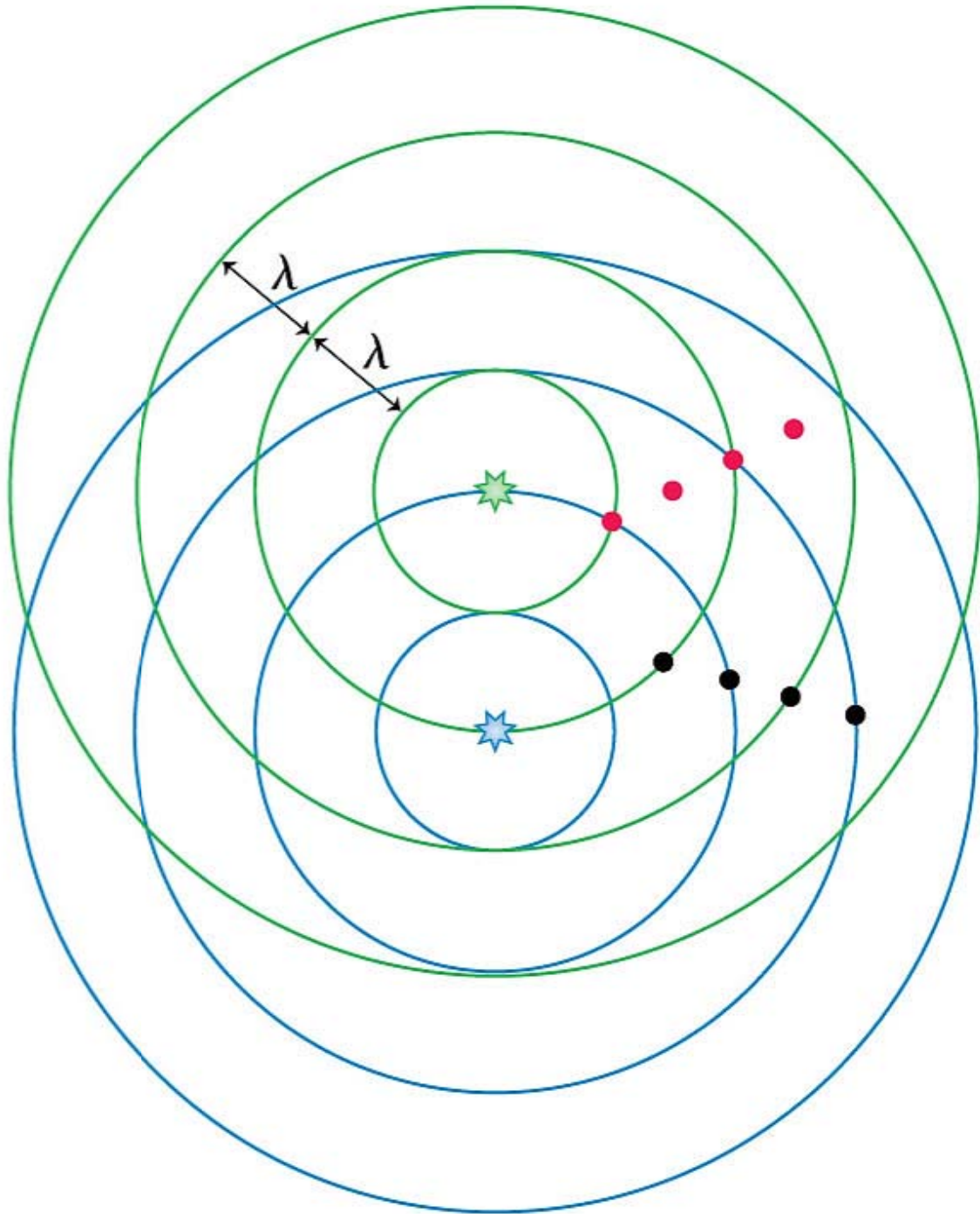
The wave fronts are crests, separated by λ .

Troughs are halfway between wave fronts.

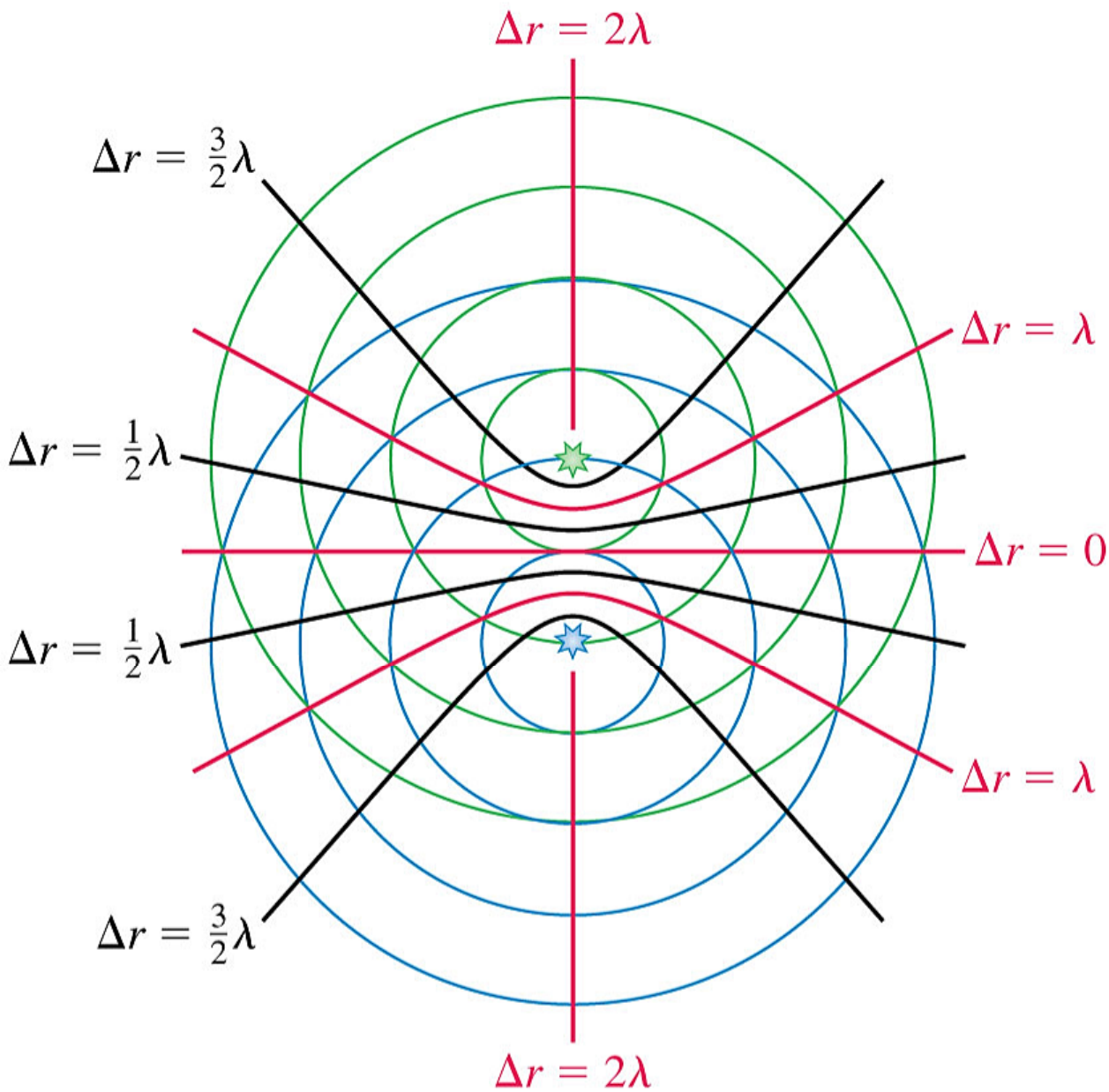


This graph shows the displacement of the medium.

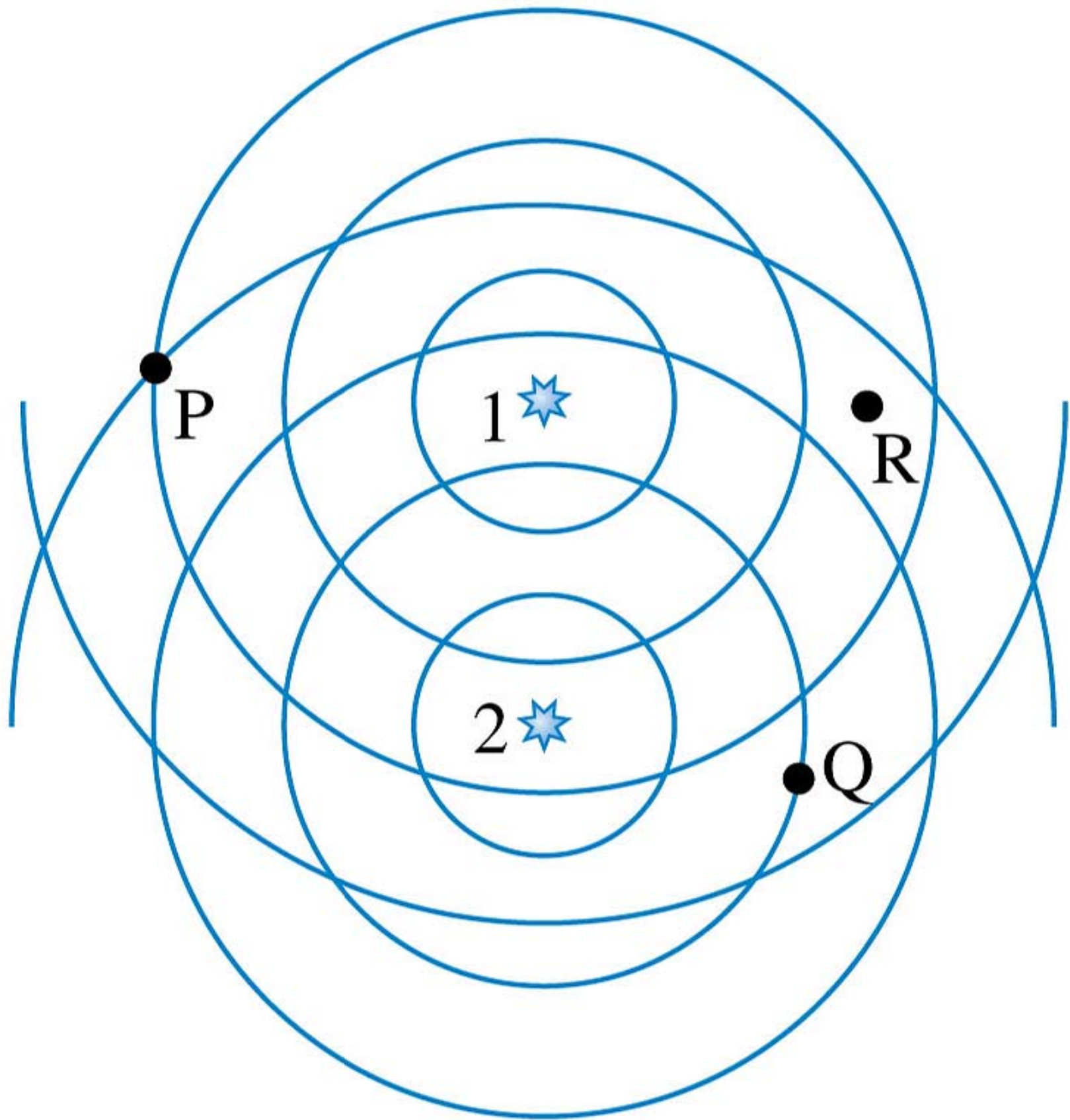
Two in-phase sources emit circular or spherical waves.



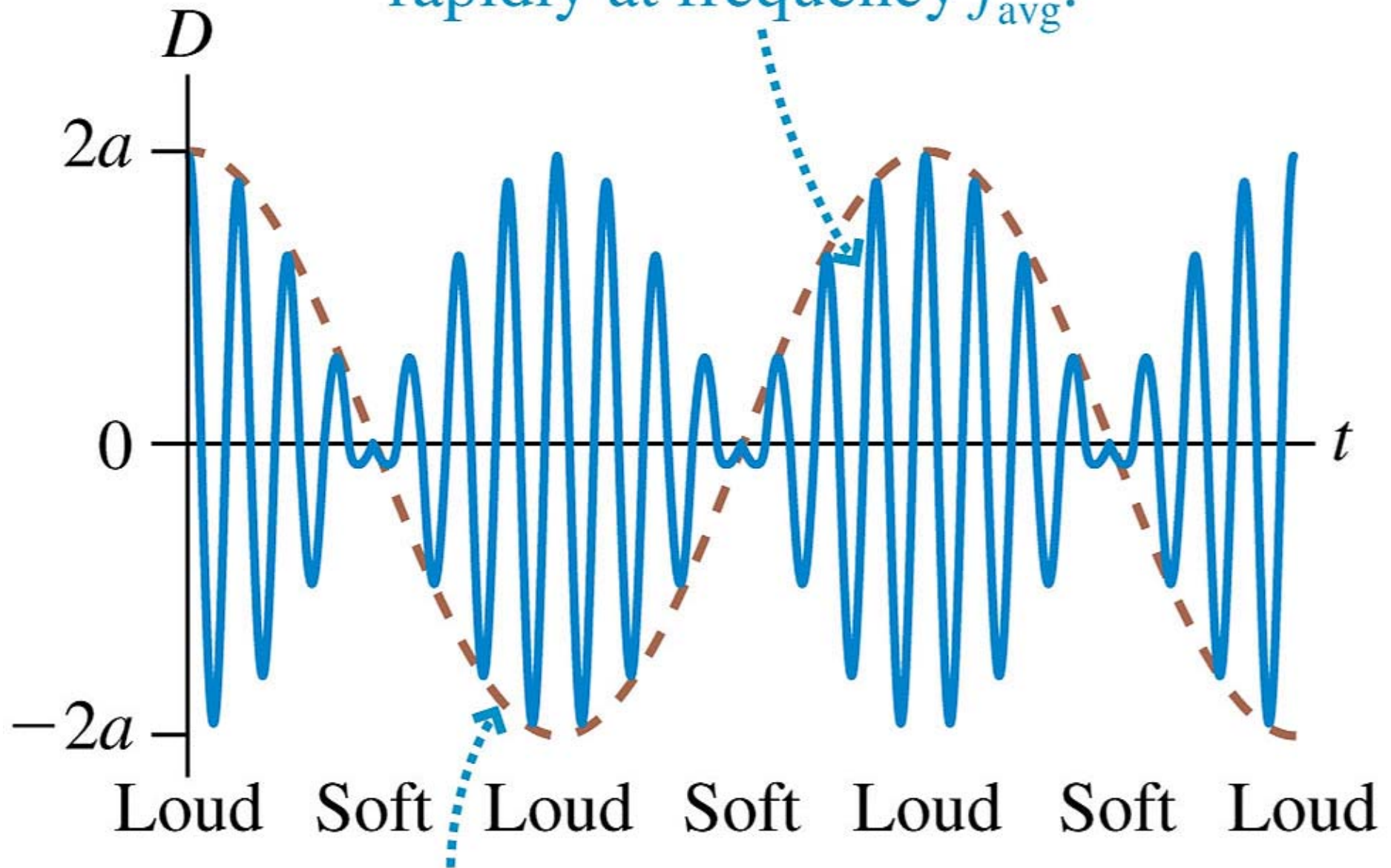
- Points of constructive interference. A crest is aligned with a crest, or a trough with a trough.
- Points of destructive interference. A crest is aligned with a trough of another wave.



- Antinodal lines, constructive interference, oscillation with maximum amplitude. Intensity is at its maximum value.
- Nodal lines, destructive interference, no oscillation. Intensity is zero.



The medium oscillates rapidly at frequency f_{avg} .



The amplitude is slowly modulated as $2a \cos(\omega_{\text{mod}} t)$.