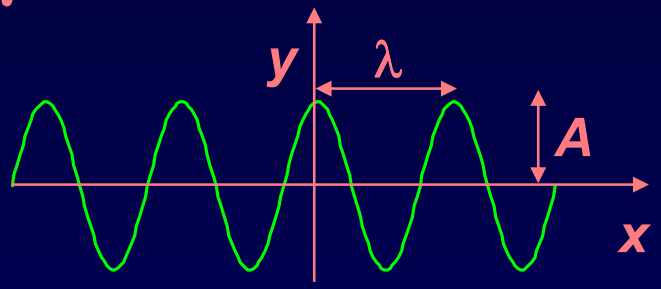
Wave Summary

The formula $y(x,t) = A\cos(kx - \omega t)$ describes a harmonic plane wave of amplitude *A* moving in the +*x* direction.



For a wave on a string, each point on the wave oscillates in the *y* direction with simple harmonic motion of angular frequency ω.

The wavelength is $\lambda = \dfrac{2\pi}{k}$; the speed is $v = \lambda f = \dfrac{\omega}{k}$

The intensity is proportional to the square of the amplitude: $I \propto A^2$

Sound waves or EM waves that are created from a point source are spherical waves, i.e., they move radially from the source in all directions.

- These waves can be represented by circular arcs:
- These arcs are surfaces of constant phase (e.g., crests)
- **Note: In general for spherical waves the intensity will fall off as $1/r^2$, i.e., the amplitude falls off as $1/r$. However, for simplicity, we will neglect this fact in Phys. 214.**