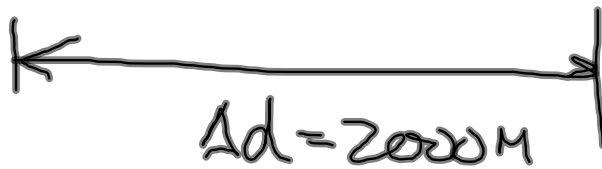


$$f = 500 \text{ Hz}$$

$$\lambda = 10 \text{ cm}$$



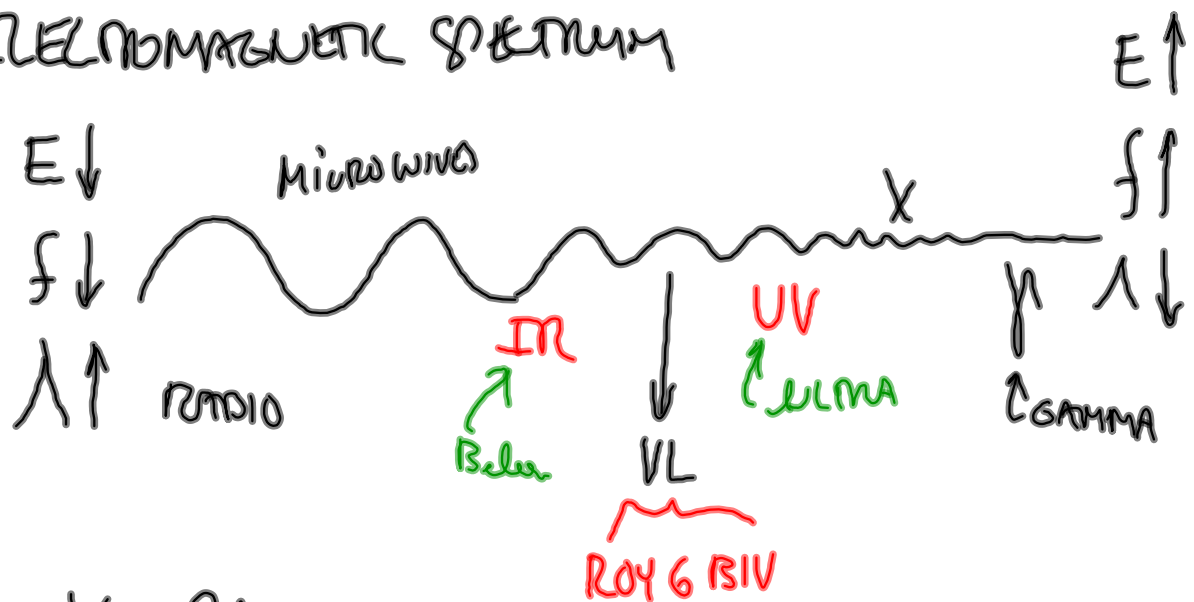
$$v = f \lambda$$

$$= \left[\frac{500 \cancel{\text{Hz}}}{\cancel{\text{s}}} \right] \left[\frac{.1 \text{ m}}{\cancel{\text{cm}}} \right]$$

$$v = 50 \text{ m/s}$$

$$\Delta t = \frac{\Delta d}{v} = \frac{2000 \cancel{\text{m}}}{50 \cancel{\text{m/s}}} = 40 \text{ s}$$

ELECTROMAGNETIC SPECTRUM



$$V = f\lambda$$

$$c = 3 \times 10^8 \text{ m/s}$$

$$c = f\lambda$$

$$\lambda = \frac{c}{f}$$

For EM Spectrum $V = C = \text{SPEED OF LIGHT}$
 $= 3 \times 10^8 \text{ M/S}$

$E \downarrow$
 $f \downarrow \lambda \uparrow$

$$V = f \lambda$$

$E \uparrow$
 $f \uparrow \lambda \downarrow$



$$c = f \lambda \quad \lambda = \frac{c}{f}$$