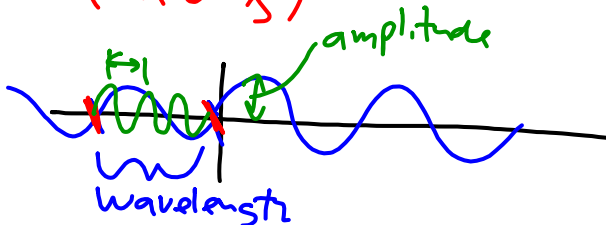


Energy Levels	Sublevels	Orbitals <sup>paths</sup>	e <sup>-</sup>
1	s	1	2
2	p	3	6
3	d	5	10
4	f	7	14
5			

$$c = \lambda \nu$$

Wavelength (m)  $\rightarrow$   $\lambda$   
 Frequency (1/s)  $\rightarrow$   $\nu$   
 speed of light  $(3 \times 10^{10} \text{ m/s})$   $\rightarrow$   $c$



$$c = \lambda \nu$$

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

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

#6  $\text{frequ} = 1600 \text{ kHz} \rightarrow 1,600,000 \text{ 1/s}$

$\lambda = ?$

$$\lambda = \frac{c}{\nu} = \frac{3 \times 10^{10} \text{ (m/s)}}{1.6 \times 10^6} = 18750 \text{ m}$$

$$E = h \nu$$

Energy (J)  $\rightarrow$   $E$   
 constant  $(6.626 \times 10^{-34} \text{ J}\cdot\text{s})$   $\rightarrow$   $h$   
 frequency (1/s)  $\rightarrow$   $\nu$

$$E = h \nu$$

$$\nu = \frac{E}{h}$$

#3  $\text{frequ} = 2.22 \times 10^{14} \text{ 1/s}$

$$E = (6.626 \times 10^{-34})(2.22 \times 10^{14}) = 1.47 \times 10^{-19} \text{ J}$$