If you didn't bring your Rainbow Glasses, pick up a pair from the front of the room!

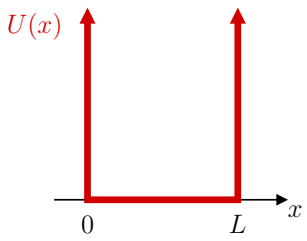
Lecture 16 — Concept Test 1

For an infinite square well of width L, which of the following could be an allowed wavenumber, k_n? Put up as many cards as are correct, and recall that $k = 2\pi/\lambda$ where λ is the wavelength.

1. $\dfrac{3\pi}{L}$
2. $\dfrac{2\pi}{L}$
3. $\dfrac{\pi}{L}$
4. $\dfrac{2\pi}{3L}$
5. $\dfrac{\pi}{2L}$
6. $\dfrac{\pi}{4L}$

Lecture 16 — Concept Test 2

For the $n = 3$ level of the infinite square well, at which of the following positions are you most likely to find the particle? *Hint:* draw ψ.



1. $L/6$

2. $L/3$

3. L

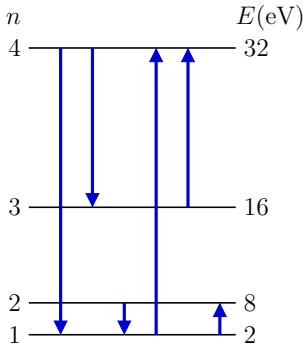
4. $L/4$

5. $L/2$

6. $2L$

Lecture 16 — Concept Test 3

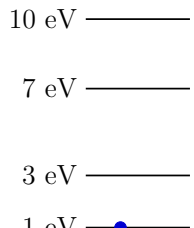
The following is a hypothetical energy level diagram showing the allowed energies for a particle confined in a 1-D potential well. For which of the labeled transitions will the wavelength of the emitted light be largest?



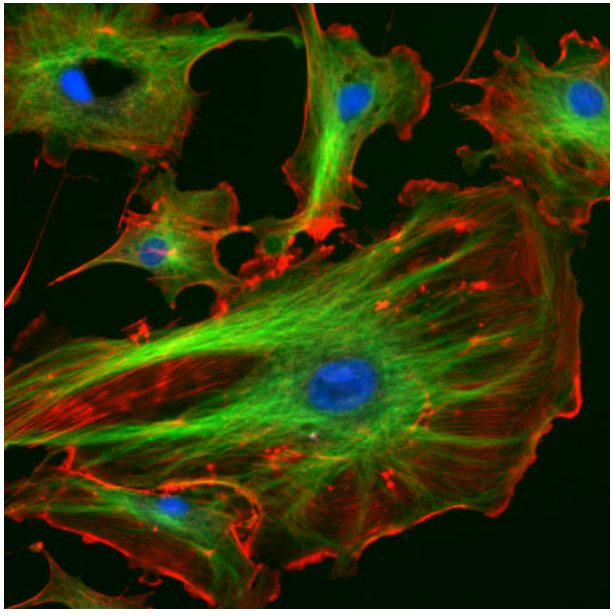
1. From 4 to 1
2. From 4 to 3
3. From 2 to 1
4. From 1 to 4
5. From 3 to 4
6. From 1 to 2

Lecture 16 — Concept Test 4

An electron in an atom starts out in the ground state, as shown in the energy level diagram. The electron absorbs a photon with energy 6 eV. What are all possible energies of photons that could then subsequently be emitted?



1. 2 eV, 4 eV, and 6 eV
2. 1 eV, 3 eV, and 7 eV
3. 4 eV and 6 eV
4. 1 eV and 3 eV
5. 3 eV and 10 eV
6. 3 eV and 4 eV



http://rsb.info.nih.gov/ij/images/