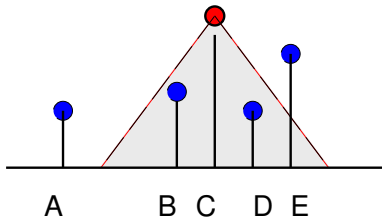1. Ever missed a line in a movie because the audience was laughing or clapping? What causes that?

2. Considering masking from frequency C (as shown by grey cone), which frequencies must we keep or can we omit to maintain human sound perception quality.

Frequency	A	B	C	D	E
keep or omit?			keep		

3. Building on masking from the previous question, consider the simplified band with 10 potential frequencies. The other 5 frequencies are not present (0 amplitude) as shown.

   - Assume we want to represent up to 8b of amplitude per frequency.
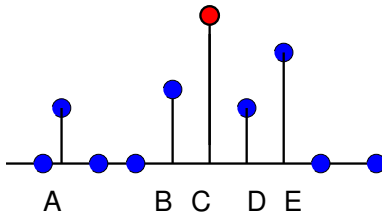
   (a) How many bits to represent the 10 frequencies with no considerations for masking or lossless compression?

   (b) With masking, how many non-zero, non-masked frequencies do we need to represent?

   (c) Assuming we represent zero and masked frequencies with 1 bit (a single zero) and non-zero/non-masked frequencies with 9 bits (a 1 followed by the 8b amplitude representation), how many bits to represent this these 10 frequencies?