

**HW1: Answer Key**

1) Table of resonant frequencies **in MHz** (most common mistake is to leave answer in Hz).

<b>Field strength</b>	<b>Resonant frequency</b>
3 Tesla	128 MHz
7 Tesla	296 MHz
10.5 Tesla	447 MHz

2) What do these numbers mean? (1 pithy sentence)

Here are various possible answers ...

The resonant frequency increases as field strength increases.

Protons resonate at frequencies with higher energies at higher field strengths.

The energy transition from spin-down (anti-aligned) to spin-up (aligned) is a bigger transition at higher field strengths.

Protons precess in a magnetic field at a frequency determined by the strength of the magnetic field.