1. What does the AUTOEND bit in the CR2 register do? Why don't you want to use it when you'll be needing a restart condition?

   ➢ The AUTOEND bit instructs the peripheral to automatically generate a stop condition at the end of a transaction when set. Doing chained reads and writes will not be possible if we have this set. Since we are doing chained reads and writes, we don't want to use AUTOEND.

2. This lab used standard-mode 100 kHz I2C speed. What values would you write in the TIMINGR if we were using 400 kHz fast-mode?

   ➢ For a 400kHz fast-mode, the settings will be:

      i. PRESC = 0

      ii. SCLL = 0x9

      iii. SCLH = 0x3

      iv. SDADEL = 0x1

      v. SCLDEL = 0x3

3. This lab used blocking code. To implement it completely as non-blocking you would replace all of the wait loops with interrupts. Most flags in the I2C peripheral can trigger an interrupt if the proper enable bit is set. Find the interrupt enable bits that match the following flags:

   - TC -> TXEIE

   - NACKF -> NACKIE

   - TXIS (transmit interrupt) -> TXIE

   - ARLO -> ERRIE

4. The gyro can operate in three full-scale/measurement ranges, measured in degrees-per-second (dps). What are these three ranges?

   ➢ The three ranges are +/- 245 dps, +/- 500 dps, +/- 2000 dps

5. What is the I2C address of the gyro when the SDO pin is low? The lab has the pin set high, read the I2C section of the gyro datasheet.

➤ When the SDO pin is connected to ground, the LSb value is '0' (address 1101000b).