Problem 2a.

2a.1. Compare gain coefficients, $\gamma$, for typical Ruby and ND: YAG laser crystals (e.g. for the parameters discussed in your notes) and discuss the major reason for that.

2a.2. Compare gain coefficients, $\gamma$, for typical He–Ne laser mixture and conditions at infrared laser line at $\lambda = 3.39 \mu m$ and red laser line at $\lambda = 0.6328 \mu m$ using available sources.

2a.3. A picture at the bottom of p.3 in Lecture 6 depicts essentially a dye laser amplifier. Suggest one (or more) mirror/resonator configurations for a laser oscillator, and elaborate the difference between them and amplifier.