

## 化數小考二 (2019/10/25)

1. Please solve the initial value problem: (50%)

$$y'' - 3y' - 4y = 0, y(0) = 2, y'(0) = 1$$

2. The chemical bond of  $H_2$  molecule is similar to a spring with  $k = 510$

N/m. what is the harmonic vibrational frequency (in  $cm^{-1}$ )? (50%)

$$amu = 1.66054 \times 10^{-27} \text{ kg}, H = 1.0078 \text{ amu}$$