

2.2)

$$m_1 = (0.9 \pm 0.1) \text{ sol mass}$$

$$m_2 = (1.4 \pm 0.2) \text{ sol mass}$$

$$\chi^2 = \frac{(m_1 - \bar{m})^2}{\sigma_1^2} + \frac{(m_2 - \bar{m})^2}{\sigma_2^2}$$

as in problem 2.1

$$\bar{m} = \frac{\frac{m_1}{\sigma_1^2} + \frac{m_2}{\sigma_2^2}}{\frac{1}{\sigma_1^2} + \frac{1}{\sigma_2^2}}$$

$$\bar{m} = \frac{\frac{0.9}{(0.1)^2} + \frac{1.4}{(0.2)^2}}{\frac{1}{(0.1)^2} + \frac{1}{(0.2)^2}} = 1.0 \text{ sol mass}$$

$$\chi^2 = \frac{(0.1)^2}{(0.1)^2} + \frac{(0.4)^2}{(0.2)^2} = 5.0$$

one degree of freedom

corresponds  $\sim 3\%$  see Fig 2.7

also see table A6.3