Problem 3.

(a) The assumptions are (Handout 10.1 Slide 3)

The model assumes that the persons full career history is irrelevant (only depends on current status) and this could be questioned (might be okay if time period is short)

The model doesn't allow transitioning from long term unemployment (might be okay for short study)

The constant intensity could only hold for short time period.

Other assumptions okay

(b)
$$L = e^{-\lambda_{es}(te)} e^{-(\lambda_{se}+\lambda_{sl})ts} \lambda_{es}^{nes} \lambda_{se}^{nse} \lambda_{sl}^{nsl}$$

(c) $\hat{\lambda}_{es} = \frac{nes}{te} = \frac{200}{30000} = 0.0067 \quad (SE = 0.0005)$

$\hat{\lambda}_{sl} = \frac{nsl}{ts} = \frac{60}{5600} = 0.0107 \quad (SE = 0.0014)$

$\hat{\lambda}_{se} = \frac{nse}{ts} = \frac{150}{5600} = 0.0268 \quad (SE = 0.0022)$