Answers (some approximation) for Old Test # 2

1. (assume time in days)
   a. 0.145/day
   b. 0.140/day
   c. \( t_D = 5.6 \) days
      \[ t_D = 5 \text{ days} \] (if assume exponential) (similar since \( y \) is small)
   d. 24 days
   e. \( \sim 25 \) days
   f. \( y_{40} = 0.91 \)
   g. \( y_{40} = 0.5 \)
   h. 40 days.
   i. 
   j. 72.4 days
   k. \( \text{AUDPC} = 16.5, 4.7, \) and 3.4 days for original, sanitation, and lower \( r^* \), respectively.

2.
   a. monomolecular
   b. \( K \approx 0.4 \)
   c. (1) 0.017/day (with \( K = 1 \); (2) 0.05/day with \( K = 0.4 \).
   d. The \( \chi \) value is larger for the first epidemic (assume 1\textsuperscript{st} epidemic has \( K = 1 \))
      \[ 0.145 \cdot 1/6 = 0.024/\text{day} \]
      \[ 0.05 \cdot 0.4/2 = 0.01/\text{day} \]