HW2 solution

LING83800

1. (a) true
   (b) false
   (c) false
   (d) true
   (e) false
   (f) true
   (g) false
   (h) false
   (i) true
   (j) false
   (k) true
   (l) false
   (m) false
   (n) false

2. (a) $\{\texttt{agh}, \texttt{aij}, \texttt{bcgh}, \texttt{bcij}, \texttt{defgh}, \texttt{defij}\}$
   (b) $\{\texttt{klmagh}, \texttt{klmaij}, \texttt{klmbcgh}, \texttt{klmbcij}, \texttt{klmdefgh}, \texttt{klmdefij}\}$
   (c) $\{\texttt{a}, \texttt{bc}, \texttt{def}, \texttt{gh}, \texttt{ij}\}$
   (d) $\{\texttt{agh}, \texttt{aij}, \texttt{bcgh}, \texttt{bcij}, \texttt{defgh}, \texttt{defij}, \texttt{klm}\}$
   (e) $\{\texttt{a}, \texttt{bc}, \texttt{def}, \texttt{mlk}\}$
   (f) $\{\texttt{a}, \texttt{aklm}, \texttt{bc}, \texttt{bcklm}, \texttt{def}, \texttt{defklm}\}$
   (g) $\{\varepsilon, \texttt{gh}, \texttt{ghgh}, \texttt{ghij}, \texttt{ij}, \texttt{ijgh}, \texttt{ijij}\}$
   (h) $\{\texttt{ghhg}, \texttt{ghji}, \texttt{ijhg}, \texttt{ijji}\}$

   (NB: order within the set does not matter, though I have used lexicographic ordering above.)

3. (a) $(\{\texttt{a}\} \cup \{\texttt{c}\})\{\texttt{a}\}$
   (b) $\{\texttt{a}\}(\{\texttt{a}\} \cup \{\texttt{b}\})(\{\texttt{a}\} \cup \{\texttt{c}\})\{\texttt{c}\}$
   (c) $\{\texttt{un}\}^?\{\texttt{lock}\}\{\texttt{able}, \texttt{ed}\}^?$

(d) $(\{\texttt{ard}\} \cup \{\texttt{glam}\} \cup \{\texttt{lab}\} \cup \{\texttt{neighb}\})\{\texttt{o}\}\{\texttt{u}\}^?\{\texttt{r}\}$

(NB: other answers may be acceptable so long as they are equivalent.)

4. (a) `/[ac]a/`

   (b) `/a[ab][ac]c/`

   (c) `/(un)?lock(able|ed)?/`

   (d) `/(ard|glam|lab|neighb)ou?r/`

   (NB: other answers may be acceptable so long as they are equivalent.)