(L) Transducing Runes (1/2)

L1.

B)	start	2	start	start	2	start	start
C)	start	start	1	start	3	start	start
D)	start	3	start	1	start	start	

(a) he#
Start in the "start" state. The edge starting in "start" marked with the character "h" transitions to the "start" state, so that is the second state. Then, the edge starting in "start" with the character "e" transitions to State 1, so that is the third state. Finally, the edge starting in "start" with character "#" returns to the "start" state, so that is the final state.

(b) stash#
Start in the "start" state. The edge starting in "start" marked with the character "s" transitions to State 2, so that is the second state. The edge starting in State 2 marked with character "t" returns to the "start" state, so that is the third state. The edge starting in the "start" state marked with character "a" returns to the "start" state, so that is the fourth state. The edge starting in the "start" state marked with character "s" transitions to State 2, so that is the fifth state. The edge starting in State 2 marked with character "h" returns to the "start" state, so that is the sixth state. Finally, the edge starting in "start" with character "#" returns to the "start" state, so that is the final state.

(c) heath#
Start in the "start" state. The edge starting in "start" marked with the character "h" transitions to the "start" state, so that is the second state. The edge starting in "start" marked with the character "e" transitions to State 1, so that is the third state. The edge starting in State 1 marked with character "a" returns to the "start" state, so that is the fourth state. The edge starting in the "start" state marked with character "t" transitions to State 3, so that s the fifth state. The edge starting in State 3 marked with character "h" returns to the "start" state, so that is the sixth state. Finally, the edge starting in "start" with character "#" returns to the "start" state, so that is the final state.

(d) thee#
Start in the "start" state. The edge starting in "start" marked with the character "t" transitions to State 3, so that is the second state. The edge starting in State 3 marked with the character "h" transitions to the "start" state, so that is the third state. The edge starting in the "start" state marked with character "e" transitions to State 1, so that is the fourth state. The edge starting in the State 1 marked with character "e" transitions to the "start" state, so that is the fifth state. Finally, the edge starting in "start" with character "#" returns to the "start" state, so that is the final state.
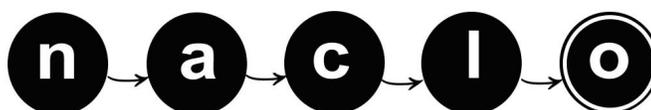
L2.   (a) 1   If you see "g" by itself, it should become ✗

(b) 7   If you see "n" followed by "g", it should become ⚡

(c) 24   If you see "n" followed by "h", it should be become ⚡ ᚺ

(d) 25   If you see "n" followed by "a", it should become ⚡ ᚠ

(e) 2   If you see "n" followed by "n", it should become ⚡ but nothing else because we don't know if the second "n" will be followed by a "g".

(f) 2   If you see "n" followed by "t", you can write ⚡ , but nothing else because we don't know if the "t" will be followed by a "h".

(g) 3   We know that State 1 corresponds to states where we've seen an "e", but we don't know what will come after (the clue is that there is a edge from State 4 to State 1 with edge e: ᛗ .) If we see an "e" followed by an "n", we should write ᛗ , but nothing else because we don't know if "n" will be followed by a "g".

L3.   (a) 40   There are eight possible inputs (aehgnst#), and each of the five states must have an edge to handle any possible input: 5 * 8 = 40
(b) 5   There is a state for each letter that can begin a digraph ("e", "n", "s", and "t") plus one for the start state.
(c) 45   There are nine possible inputs (adehgnst#), and each of the five states must have an edge to handle any possible input: 5 * 9 = 45.