There are 11 vertices. So Dijkstra's Algorithm will use 10 steps. At each step we'll add the vertex that minimizes $d(u_0, a) + w(u, v)$.

So, ① $v$ gets added to $S'$
② $v$ gets removed from $S$
③ The label $L[v]$ is fixed

**Step 0 (Initialization)**

$S' = \{ u_0 \}$  $L[u_0] = 0$
Step 1
\[ L[w_3] = 1, \quad L[w_2] = 8, \quad L[w_1] = 2 \]
add \( w_3 \)

Step 2
\[ L[w_3] = 2, \quad L[w_2] = 8, \quad L[w_6] = 9 \]
add \( w_1 \)

Step 3
\[ L[w_2] = 8, \quad L[w_4] = 3, \quad L[w_6] = 10 \]
add \( w_4 \)

Step 4
\[ L[w_2] = 8, \quad L[w_5] = 6, \quad L[w_6] = 10, \quad L[w_7] = 5 \]
add \( w_7 \)

Step 5
\[ L[w_2] = 8, \quad L[w_5] = 6, \quad L[w_6] = 10, \quad L[w_8] = 12, \quad L[w_9] = 14 \]
add \( w_5 \)

Step 6
\[ L[w_2] = 8, \quad L[w_4] = 10, \quad L[w_8] = 12, \quad L[w_9] = 14 \]
add \( w_2 \)
Step 7
\[ L[\omega_6] = 10, L[\omega_8] = 12, L[v_0] = 14 \]
add \( \omega_6 \)

Step 8
\[ L[\omega_6] = 12, L[\omega_8] = 11, L[v_0] = 14 \]
add \( \omega_8 \)

Step 9
\[ L[\omega_8] = 12, L[v_0] = 14 \]
add \( \omega_8 \)

Step 10
\[ L[v_0] = 14 \]
add \( v_0 \)