Given a DFA denoted by the transition table shown below, and assuming that **1** is the start state and **1** , **2** and **4** are final states, fill in the equivalent states matrix I have provided. Use this to create an equivalent, minimal state DFA.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **a** | **b** | **c** |  |  |  |  |  |  |  |
| **>1** | **6** | **3** | **2** |  | **2** | **5,6** |  |  |  |  |
| **2** | **5** | **3** | **1** |  | **3** | **X** | **X** |  |  |  |
| **3** | **2** | **4** | **5** |  | **4** | **5,63,5 X’’1,2** | **3,5 X’’** | **X** |  |  |
| **4** | **5** | **5** | **1** |  | **5** | **X** | **X** | **2,5 X’1,4** | **X** |  |
| **5** | **5** | **1** | **5** |  | **6** | **X** | **X** | **2,5 X’2,45,6** | **X** | **1,2** |
| **6** | **5** | **2** | **6** |  |  | **>1** | **2** | **3** | **4** | **5** |

**Don’t forget to construct and write down your new, equivalent automaton!! Be sure to clearly mark your start state and your final state(s). Note X is for immediate incompatibility; X’ is because of an immediate one; X’’ is because of an X’.**

b

b

a

c

**A**

**56**

**44**

a,c

a

**3**

**12**

**4**

a,b

c

c

b