

Determinar la o las claves candidatas de cada una de las variables de relación. A continuación, realizar el proceso de normalización hasta la mejor forma normal conocida.

a) **{A,B,C,D,E,F,G,H,I,J,K}**

DF's

$\{A,B\} \rightarrow \{C,D,E,F,G\}$
 $\{B\} \rightarrow \{H,I,J,K\}$
 $\{C,D\} \rightarrow \{E,F,G\}$
 $\{D,E\} \rightarrow \{C,F,G\}$

$\{F\} \rightarrow \{G\}$
 $\{H\} \rightarrow \{K,J\}$
 $\{I\} \rightarrow \{J\}$

b) **{A,B,C,D,E,F,G,H,I,J,X,Y,Z}**

DF's

$\{X,Y,Z\} \rightarrow \{A,B,C,D,E,F,G,H,I,J\}$
 $\{X,Y\} \rightarrow \{A,B,C\}$
 $\{Y,Z\} \rightarrow \{H,I,J\}$
 $\{A,B\} \rightarrow \{C\}$

$\{C,B\} \rightarrow \{A\}$
 $\{H\} \rightarrow \{J\}$
 $\{I\} \rightarrow \{H,J\}$
 $\{Y\} \rightarrow \{F,G\}$

c) **{A,B,C,D,E,F,G,H,I,J,K}**

DF's

$\{A\} \rightarrow \{C,D,E,F,G\}$
 $\{B\} \rightarrow \{H,I,J,K\}$
 $\{K\} \rightarrow \{I,J\}$

$\{C,D\} \rightarrow \{E,F,G\}$
 $\{D,E\} \rightarrow \{C,F,G\}$
 $\{F\} \rightarrow \{G\}$

d) **{A,B,C,D,E,F,G,H,I,J,K}**

DF's

$\{A\} \rightarrow \{C,D,E\}$
 $\{B\} \rightarrow \{H,K\}$
 $\{K\} \rightarrow \{I\}$
 $\{C,D\} \rightarrow \{E,F,G\}$

$\{C,E\} \rightarrow \{D,F,G\}$
 $\{F\} \rightarrow \{J\}$
 $\{D\} \rightarrow \{E\}$

e) **{A,B,C,D,L,M,N,Q,X,Y,Z}**

DF's

$\{M\} \rightarrow \{A,B,C,D\}$
 $\{N\} \rightarrow \{X,Y,Z\}$
 $\{A,B\} \rightarrow \{C,D\}$

$\{B,C\} \rightarrow \{A,D\}$
 $\{M,N\} \rightarrow \{L\}$
 $\{Z\} \rightarrow \{Q\}$

f) **{A,B,C,L,M,N,O,P,Q,X,Y,Z}**

DF's

$\{M\} \rightarrow \{O,P,Q\}$
 $\{N\} \rightarrow \{A,B,C\}$
 $\{Z\} \rightarrow \{X,Y\}$
 $\{L\} \rightarrow \{X,Y,Z\}$

$\{O\} \rightarrow \{Q\}$
 $\{A,B\} \rightarrow \{C\}$
 $\{B,C\} \rightarrow \{A\}$
 $\{Q\} \rightarrow \{P\}$

g) **{A,B,C,D,E,F,M,N,O,P,X,Y,Z}**

DF's

$\{A,B\} \rightarrow \{X,Y,Z\}$
 $\{B\} \rightarrow \{M,N,P,O\}$
 $\{N\} \rightarrow \{P\}$

$\{C,D\} \rightarrow \{E,F\}$
 $\{D,E\} \rightarrow \{C,F\}$
 $\{X\} \rightarrow \{Z\}$

h) **{A,B,C,D,E,F,M,N,O,P,X,Y,Z}**

DF's

$\{X\} \rightarrow \{A,B,C,D,E,F\}$

$\{Y\} \rightarrow \{M,N,P,O\}$

$\{A,B,C\} \rightarrow \{D,E,F\}$

$\{B,C,D\} \rightarrow \{A,E,F\}$

$\{N\} \rightarrow \{O,P,Z\}$

$\{M\} \rightarrow \{N\}$

i) **{A,B,C,O,P,Q,R,S,T,V,W,X,Y,Z}**

DF's

$\{A\} \rightarrow \{W,X,Y,Z\}$

$\{W\} \rightarrow \{X,Y\}$

$\{Z\} \rightarrow \{V\}$

$\{B\} \rightarrow \{O,P\}$

$\{O\} \rightarrow \{P\}$

$\{P\} \rightarrow \{O\}$

$\{C\} \rightarrow \{Q,R,S,T\}$

$\{R\} \rightarrow \{S\}$

j) **{A,B,C,D,E,F,G,H,U,V,W,X,Y,Z}**

DF's

$\{W\} \rightarrow \{X,Y,Z,H\}$

$\{X\} \rightarrow \{Y,Z\}$

$\{Z\} \rightarrow \{Y\}$

$\{Y\} \rightarrow \{Z\}$

$\{V\} \rightarrow \{A,B,C,D\}$

$\{A\} \rightarrow \{D\}$

$\{B\} \rightarrow \{C\}$

$\{U\} \rightarrow \{E,F,G\}$

$\{E\} \rightarrow \{G\}$

$\{G\} \rightarrow \{H\}$

k) **{D,E,F,G,I,J,K,L,M,N.O.P}**

DF's

D->K,L,J

E,F->N,M

N->O,P

E->G

I->J

M->N

F,G->M

G->E