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1- a)

|  |  |
| --- | --- |
| A | B |
| a | b |
| c | b |
| d | e |
| b | d |
| e | a |
| b | e |

b) Impossível sem projetar a coluna B.

c)

|  |  |
| --- | --- |
| A | B |
| c | b |
| d | e |

d)

|  |  |  |  |
| --- | --- | --- | --- |
| R.A | R.B | T.B | T.C |
| a | b | b | c |
| a | b | e | a |
| a | b | b | d |
| c | b | b | c |
| c | b | e | a |
| c | b | b | d |
| d | e | b | c |
| d | e | e | a |
| d | e | b | d |

e)

|  |
| --- |
| A |
| a |
| c |
| d |

f)

|  |  |  |  |
| --- | --- | --- | --- |
| R.A | R.B | T.B | T.C |
| a | b | e | a |
| c | b | b | c |
| d | e | b | d |

g)

|  |  |  |  |
| --- | --- | --- | --- |
| S.A | S.B | T.B | T.C |
| b | d |  |  |
| e | a |  |  |
| b | e | e | a |
| a | b | b | c |
| e | b | b | d |

h)

|  |
| --- |
| U |
| b |
| e |

i) Considerando R.B = S.B = T.B

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| R.A | R.B | S.A | S.B | T.B | T.C |
| a | b | a | b | b | c |
| a | b | a | b | b | d |
| c | b | a | b | b | c |
| c | b | a | b | b | d |
| d | e | b | e | e | a |

2) T=R join (R.B=S.B ^ R.C=S.C) S

U=PI A,D (R.B=‘b’ ^ S.B=‘b’ ^ R.C=‘c’ ^ S.C= ‘c’) (R X S)

3.1) PI color sigma sid=‘31’ ^ R2.bid=B1.bid (S3 X R2 X B1)

3.2) PI name sigma S3.sid=R2.sid (S3 X R2)

3.3) PI name sigma B1.color=‘red’ v B1.color=‘green’ ^ R2.bid=B1.bid ^ S3.sid=R2.sid (S3 X R2 X B1)

3.4) PI name sigma B1.color=‘red’ ^ B1.color=‘green’ ^ R2.bid=B1.bid ^ S3.sid=R2.sid (S3 X R2 X B1)

3.5) PI sid sigma S3.age>20 ^ R2.sid=S3.sid ^ R2.bid=B1.bid ^ B1.color!=‘red’ (S3 X R2 X B1)