

## Task 2

(1)

minimal key: AE

derivations:  $AE \rightarrow BE$ ,  $AE \rightarrow ACD$ ,  $AE \rightarrow BCD$

(2)

minimal key: AB, D

derivations:  $ABD \rightarrow DE$ ,  $DE \rightarrow ABCE$ ,  $ABD \rightarrow CE$

(3)

minimal key: A

Derivations:  $ACE \rightarrow CEBD$ ,  $A \rightarrow CE$ ,  $A \rightarrow BD$ ,  $A \rightarrow CEBD$

(4)

minimal key: ACDE, BCDE

Derivations:  $ACDE \rightarrow BCDE$   $BCDE \rightarrow ACDE$