

לע' פ רע' זל' מ' נס' פ' נס' - 16 ינ' 208271778 : 5.5

1. חל

נ' נס' ו' נס' ו' נס' נס' נס' נס' נס'

ונס' נס' נס' נס' נס' נס' נס' נס' נס'

V_1, V_2, \dots, V_n - סדרה

T - פוליה

NaN - סיב

C - דון

אלגורייד:

ס' $ON(X, Y) = \sqrt{G}$ אם X פוליה

לכל i : אם V_i מוגן, דרכו i .
 $ON(C, NaN)$ סיב \Rightarrow דון
סיב \Rightarrow מוגן \Rightarrow סיב
דון \Rightarrow מוגן \Rightarrow סיב
האם V_i מוגן \Rightarrow $ON(V_i, T)$ סיב
האם V_i סיב \Rightarrow מוגן \Rightarrow סיב

נוב' פ:

$ON(C, NaN) \rightarrow ON(NaN, V_1) \rightarrow ON(V_n, T)$ סיב

$ON(V_i, V_{i+1}) : n-1 \text{ or } 1N ; GP \text{ סיב}$

$ON(C, NaN) \rightarrow ON(NaN, V_1) \rightarrow ON(V_{n-1}, T)$ סיב

סיב $ON(V_n, V_{n-1})$ סיב $ON(V_{n-2}, V_n)$ סיב

$ON(V_i, V_{i+1}) : n-3 \text{ or } 1N ; GP$

Exercises

Action($\text{pick}(x)$),

precond: $\text{on}(c, \text{NaN}) \wedge \text{on}(\text{NaN}, x) \wedge \text{on}(x, t)$

Effect: $\neg \text{on}(c, \text{NaN}) \wedge \neg \text{on}(\text{NaN}, x) \wedge \neg \text{on}(x, t) \wedge$
 $\text{on}(c, x) \wedge \text{on}(x, \text{NaN})$)

Action($\text{drop}(x)$),

precond: $\text{on}(c, x) \wedge \text{on}(x, \text{NaN})$

Effect: $\text{on}(c, \text{NaN}) \wedge \neg \text{on}(\text{NaN}, x) \wedge \neg \text{on}(x, t) \wedge$
 $\neg \text{on}(c, x) \wedge \neg \text{on}(x, \text{NaN})$)

Action($\text{stack}(x, y)$),

precond: $\text{on}(c, x) \wedge \text{on}(\text{NaN}, y) \wedge \text{on}(x, \text{NaN})$

Effect: $\text{on}(x, y) \wedge \neg \text{on}(c, x) \wedge \neg \text{on}(\text{NaN}, y) \wedge \neg \text{on}(x, \text{NaN}) \wedge$
 $\text{on}(c, \text{NaN}) \wedge \neg \text{on}(\text{NaN}, x)$)

Action($\text{unstack}(x, y)$),

precond: $\text{on}(c, \text{NaN}) \wedge \text{on}(\text{NaN}, x) \wedge \text{on}(x, y)$

Effect: $\neg \text{on}(c, \text{NaN}) \wedge \neg \text{on}(\text{NaN}, x) \wedge \neg \text{on}(x, y) \wedge$
 $\text{on}(c, x) \wedge \neg \text{on}(x, \text{NaN})$)

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Action(pr'rel(j))

Precond: Att(car, DS) \wedge Ignition(key)

Effect: Att(car, j) \wedge \neg Att(car, DS))

Action(pr'rel(ds))

Precond: Att(car, j) \wedge Ignition(key)

Effect: Att(car, DS) \wedge \neg Att(car, j))

Action(insert(key))

Precond: Inpacket(key)

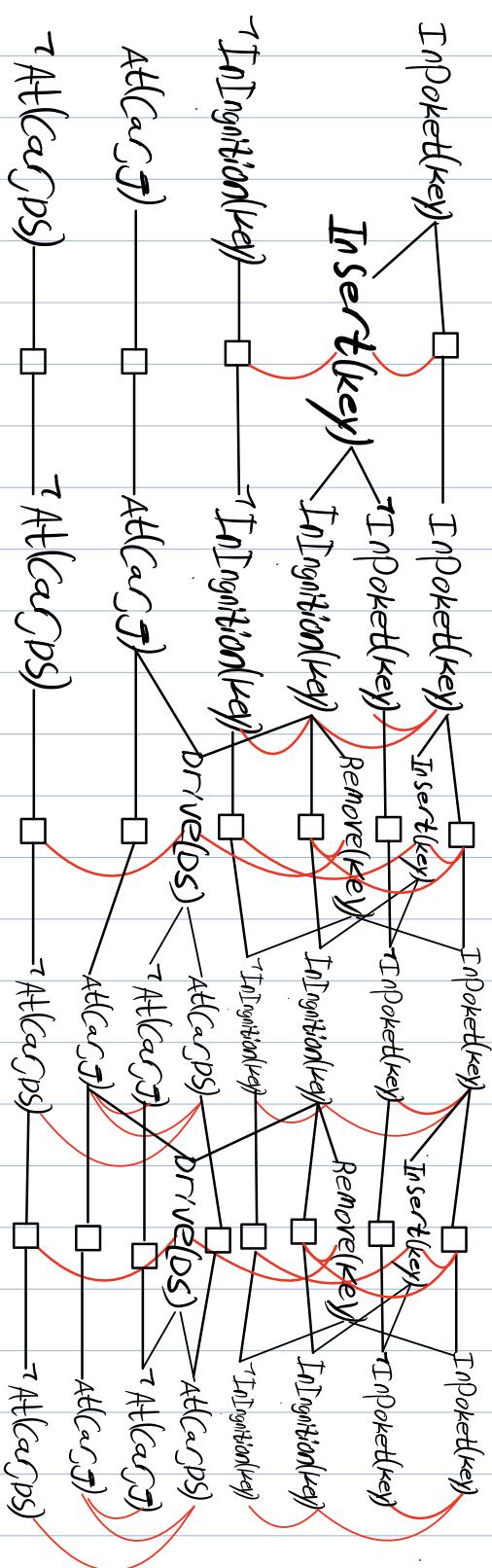
Effect: Ignition(key) \wedge \neg Inpacket(key))

Action(remove(key))

Precond: Ignition(key)

Effect: Inpacket(key) \wedge \neg Ignition(key))

880



car could run with key
precond: $\neg \text{InPocket}(\text{key})$
post: $\text{Car}(\text{key})$

Action($\text{drive}(\text{ds})$)

precond:

Effect: $\text{AttCar}(\text{ds}) \wedge \neg \text{AttCar}(\text{js})$

Action($\text{drive}(\text{ds})$)

precond:

Effect: $\text{AttCar}(\text{ds}) \wedge \neg \text{AttCar}(\text{js})$

Action($\text{Insert}(\text{key})$)

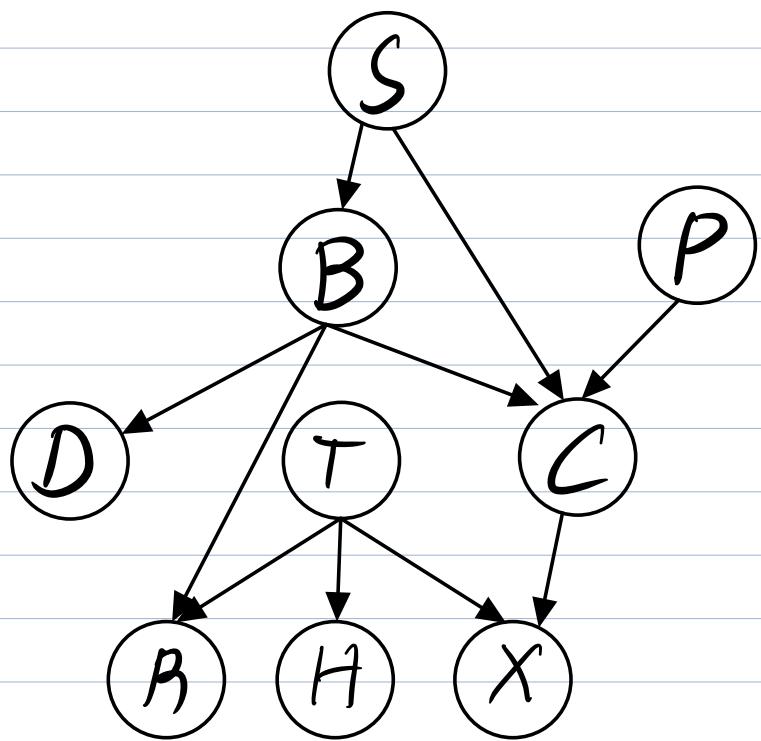
precond:

Effect: $\text{Ignition}(\text{key}) \wedge \neg \text{InPocket}(\text{key})$

Action($\text{Remove}(\text{key})$)

precond:

Effect: $\text{InPocket}(\text{key}) \wedge \neg \text{Ignition}(\text{key})$



3 → 4th
K

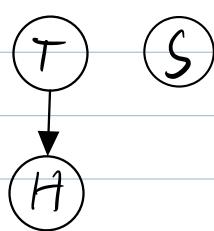
2

$$P(S, P, B, D, T, C, R, H, X) =$$

$$= p(S) \cdot p(B|S) \cdot p(P) \cdot p(D|B) \cdot p(T) \cdot p(C|B, S, P) \cdot p(R|B, T) \cdot p(H|T) \cdot p(X|T, C)$$

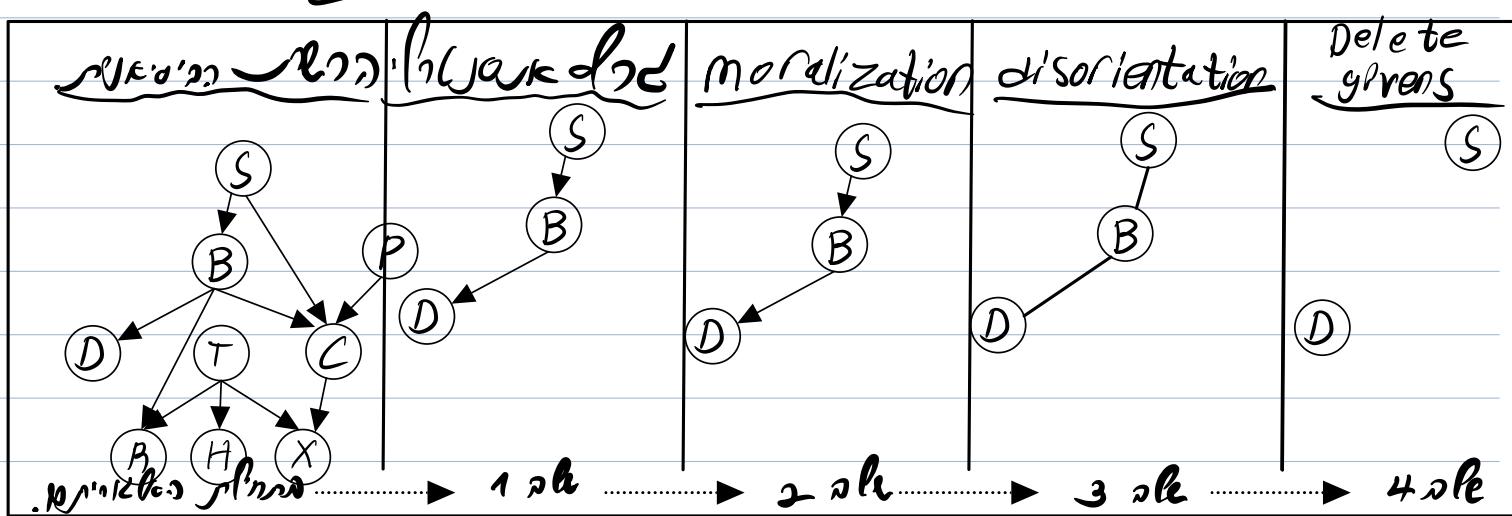
דיאל פון וְהַרְבָּרְגִּי כְּפָרְנָה, 1. מִתְּמֻנָּה רְכִיבָה בְּאַתְּקִינְתָּן.

H1 S C T R H X P D



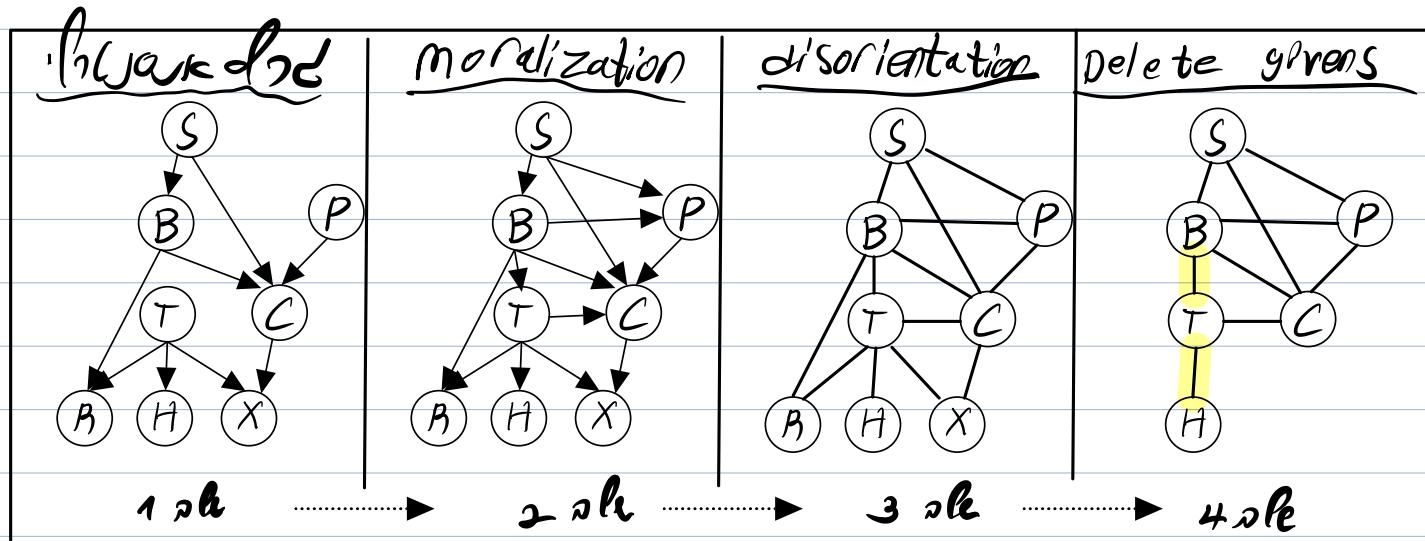
מִתְּמֻנָּה יְהֵא

רְשָׁקָה כְּפָרְנָה, 2.

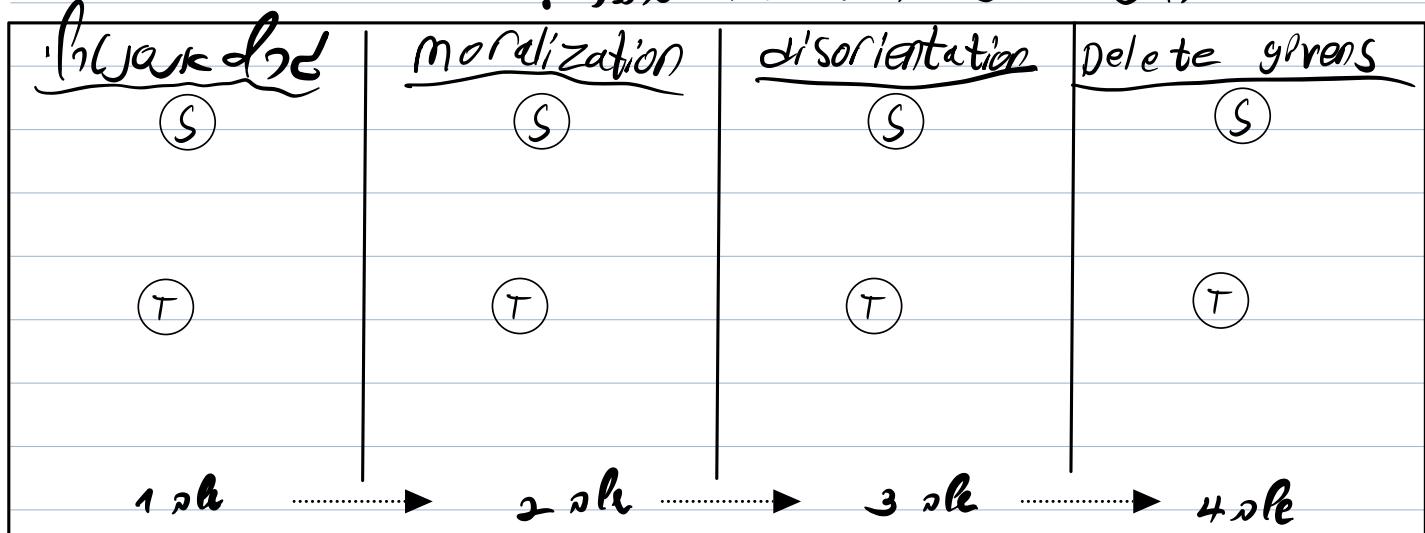
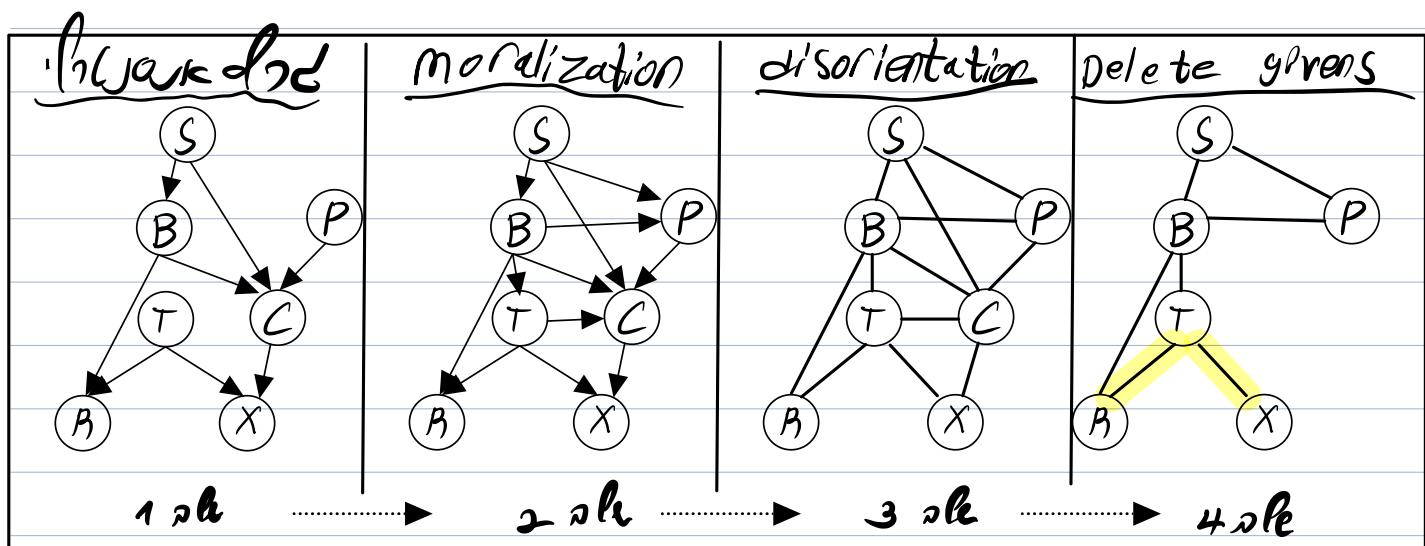


מִלְבָד כֵּן מִתְּנִיחַת הַדָּבָר כֵּן מִתְּנִיחַת הַדָּבָר.

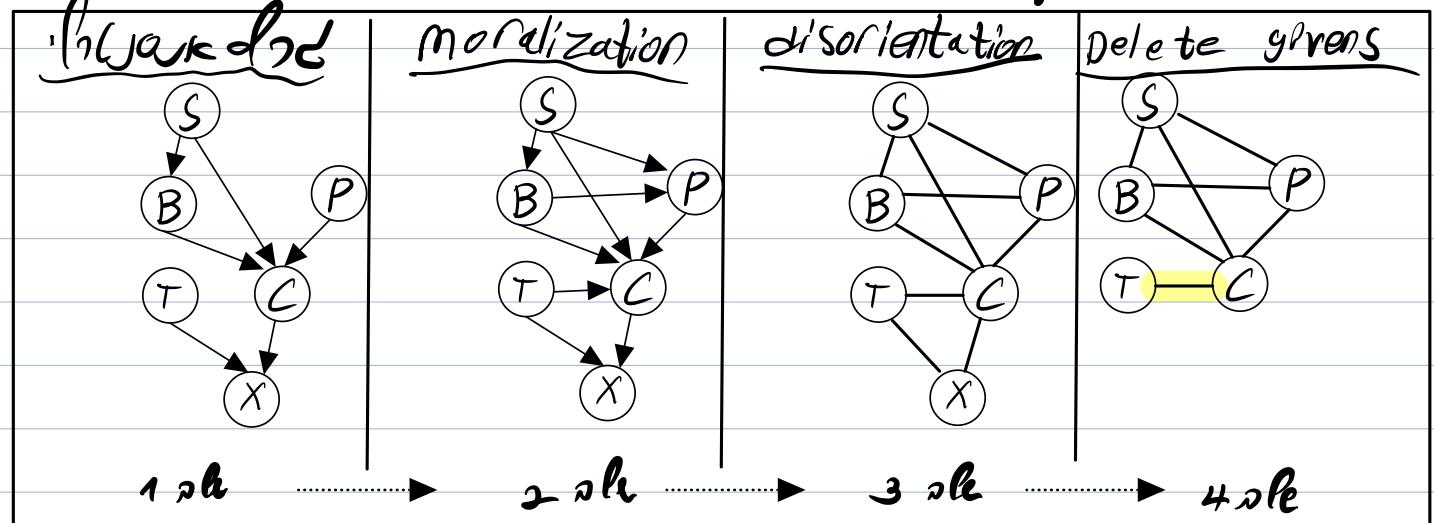
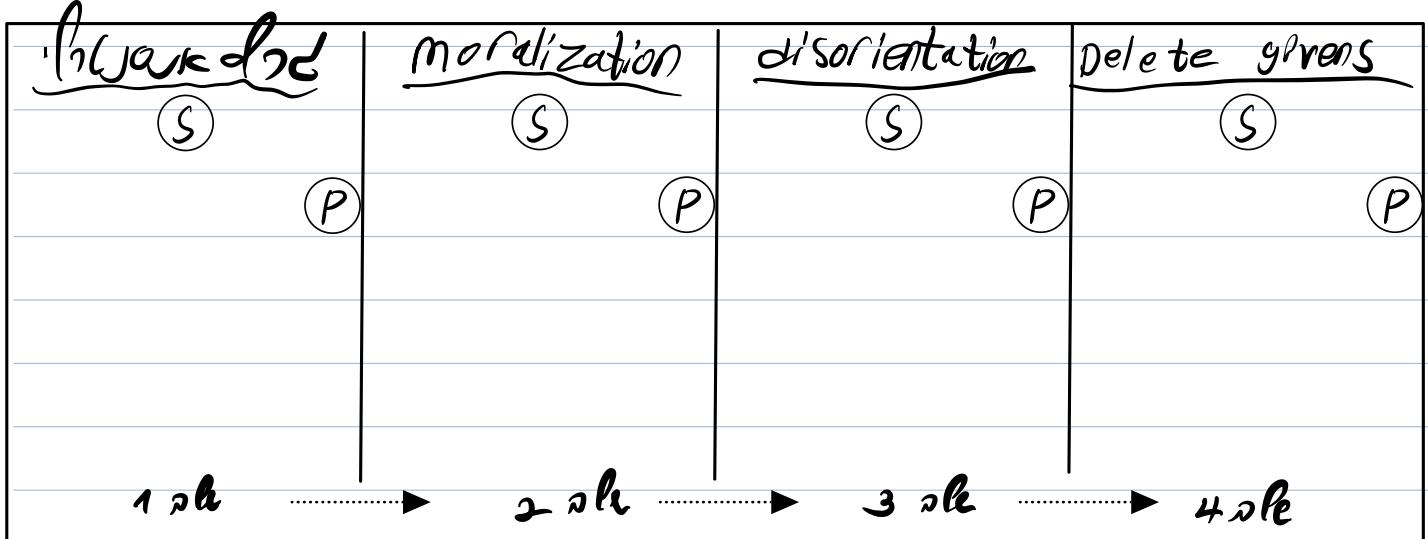
הנרי:



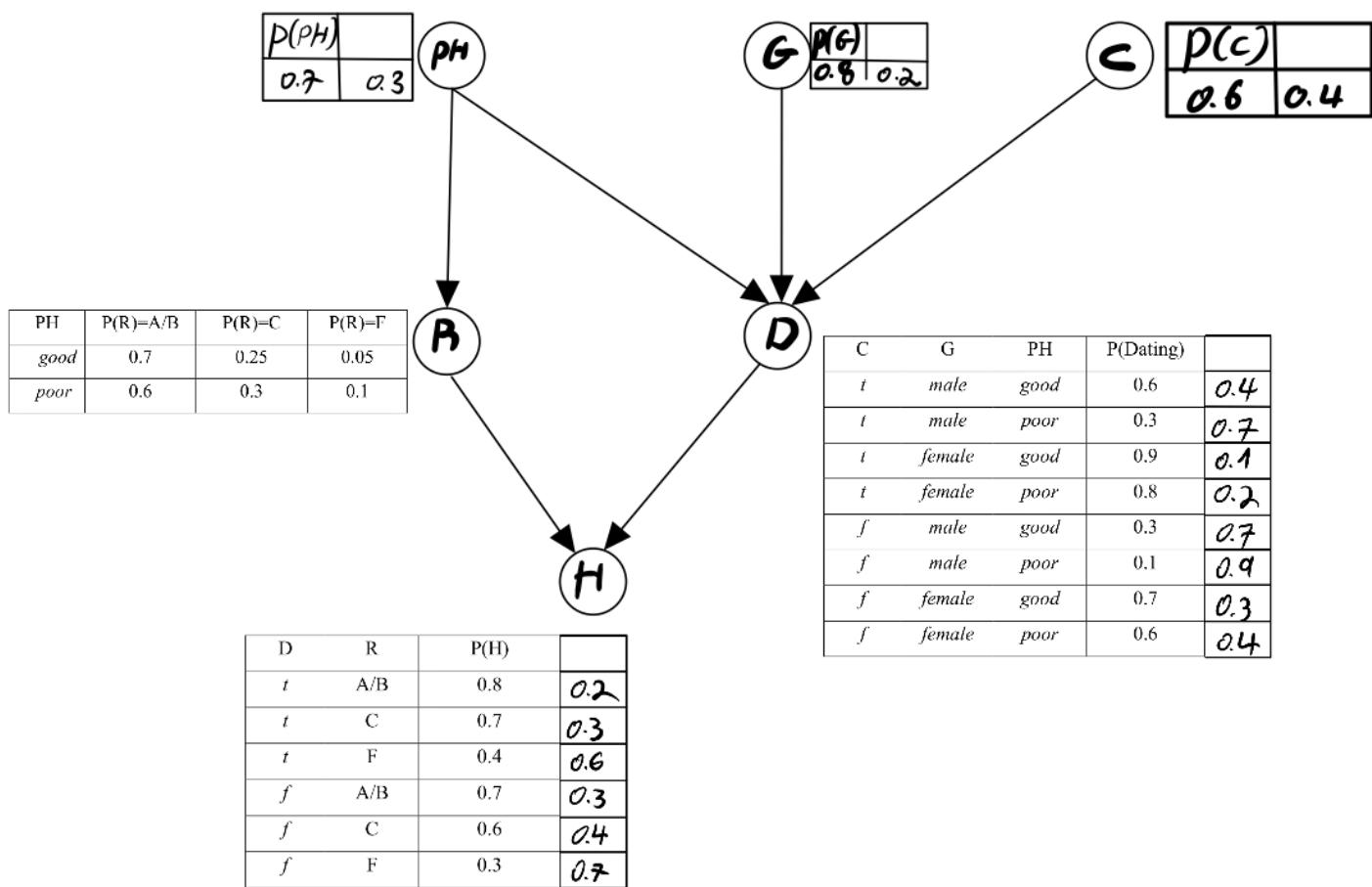
ל. כהן פירעון ב-IX פברואר 1948.



לעומת זה, מושג זה מוגדר כפונקציית הסתברות של מושג S , $P(S)$.
במילים אחרות, מושג S מוגדר כפונקציית הסתברות של מושג s , $P(s|S)$.



4 place



variable p 2nd place value 1st place k.1

: by following rule. PH ∩ C, R ∩ D

$$P(G, C, D, P, R, H) = P(G, C, D, P, H, R, H) = P(G) \cdot P(C) \cdot P(PH) \cdot P(D|G, PH) \cdot P(R|P, PH) \cdot P(H|R, D)$$

c-1 D ∩ R ∩ C ∩ H ∩ P ∩ H ∩ R ∩ C ∩ D ∩ R ∩ C ∩ H

so this is D ∩ R ∩ C ∩ H ∩ P ∩ H ∩ R ∩ C ∩ D ∩ R ∩ C ∩ H

$$P(H|R, D, C) = P(H|R, D)$$

Dating ∩ grade person good but 2

so the cute ∩ happy so

$$P(H=\text{true} | D=\text{true}, G=\text{male}, P=\text{poor}, R=A/B) = P(H=\text{true} | D=\text{true}, G=\text{male}) \stackrel{K}{=} 0.8$$

H true, P true, G male, R A/B

$$P(H=\text{true}, D=\text{true}, G=\text{male}, P=\text{poor}, R=A/B) = P(H=\text{true}, D=\text{true}, G=\text{male}, P=\text{poor}) \stackrel{N}{=}$$

$$= P(H=\text{true}, D=\text{true}, G=\text{male}, P=\text{poor}, R=A/B, C=\text{true}) +$$

$$P(H=\text{true}, D=\text{true}, G=\text{male}, P=\text{poor}, R=A/B, C=\text{false}) =$$

$$= P(P=\text{poor}) \cdot P(G=\text{male}) \cdot P(R=A/B | P=\text{poor}) \cdot P(H=\text{true} | R=A/B, D=\text{true}) \cdot P(C=\text{true}) \cdot \\ \cdot P(D=\text{true} | P=\text{poor}, G=\text{male}, C=\text{true}) +$$

$$P(P=\text{poor}) \cdot P(G=\text{male}) \cdot P(R=A/B | P=\text{poor}) \cdot P(H=\text{true} | R=A/B, D=\text{true}) \cdot P(C=\text{false}) \cdot \\ \cdot P(D=\text{true} | P=\text{poor}, G=\text{male}, C=\text{false}) =$$

$$= (0.3) \cdot (0.8) \cdot (0.6) \cdot (0.8) \cdot (0.6) \cdot (0.3) + (0.3) \cdot (0.8) \cdot (0.6) \cdot (0.8) \cdot (0.4) \cdot (0.1) =$$

$$= (0.1152) \cdot (0.18) + (0.1152) \cdot (0.04) = 0.025344$$

$P(C | D=\text{true}, G=\text{male}, P=\text{good}, H=\text{true})$

$$X_1 := p(C=T, D=T, G=M, P=g, H=T) =$$

$$\underbrace{P(C=T, D=T, G=M, P=g, H=T)}_{\text{...}} = \underbrace{P(C=T) \cdot P(D=T | C=T, G=M, P=g) \cdot P(G=M | P=g) \cdot P(H=T | D=T, P=g)}$$

$$\sum_B P(C=T) \cdot P(G=M) \cdot P(P=g) \cdot P(D=T | C=T, G=M, P=g) \cdot P(R | P=g) \cdot P(H=T | D=T, R) =$$

$$\underbrace{P(G=M) \cdot P(P=g)}_{Y_1} \cdot \underbrace{P(C=T) \cdot P(D=T | C=T, G=M, P=g)}_{Z_1} \cdot \underbrace{\sum_B P(R | P=g) \cdot P(H=T | D=T, R)}_{X_2}$$

$$X_2 := p(C=F, D=T, G=M, P=g, H=T) =$$

$$\therefore \text{...}$$

$$\sum_B P(C=F) \cdot P(G=M) \cdot P(P=g) \cdot P(D=T | C=F, G=M, P=g) \cdot P(R | P=g) \cdot P(H=T | D=T, R) =$$

$$\underbrace{P(G=M) \cdot P(P=g)}_{Y_1} \cdot \underbrace{P(C=F) \cdot P(D=T | C=F, G=M, P=g)}_{Z_2} \cdot \underbrace{\sum_B P(R | P=g) \cdot P(H=T | D=T, R)}_{X_2}$$

$$X_1 - X_2 = (Y_1 \cdot Z_1 \cdot Y_2) - (Y_1 \cdot Z_2 \cdot Y_2) = (Y_1 \cdot Y_2) \cdot (Z_1 - Z_2)$$

: P(1)

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$$p(C | D=T, G=M, P=g, H=T) = \frac{p(C=T, D=T, G=M, P=g, H=T)}{p(C=T, D=T, G=M, P=g, H=T) + p(C=F, D=T, G=M, P=g, H=T)}$$

$$= \frac{-X_1 - \frac{(Y_1 \cdot Y_2) \cdot Z_1}{(Y_1 \cdot Y_2) \cdot (Z_1 + Z_2)} - Z_1}{X_1 - X_2 - \frac{(Y_1 \cdot Y_2) \cdot (Z_1 + Z_2)}{(Y_1 \cdot Y_2) \cdot (Z_1 + Z_2)}} =$$

$$= \frac{p(C=T) \cdot P(D=T | C=T, G=M, P=g)}{p(C=T) \cdot P(D=T | C=T, G=M, P=g) + p(C=F) \cdot P(D=T | C=F, G=M, P=g)} = \frac{(0.6) \cdot (0.6)}{(0.6) \cdot (0.6) + (0.4) \cdot (0.3)} =$$

$$\frac{0.36}{0.36 + 0.12} = \frac{0.36}{0.48} = 0.75$$