

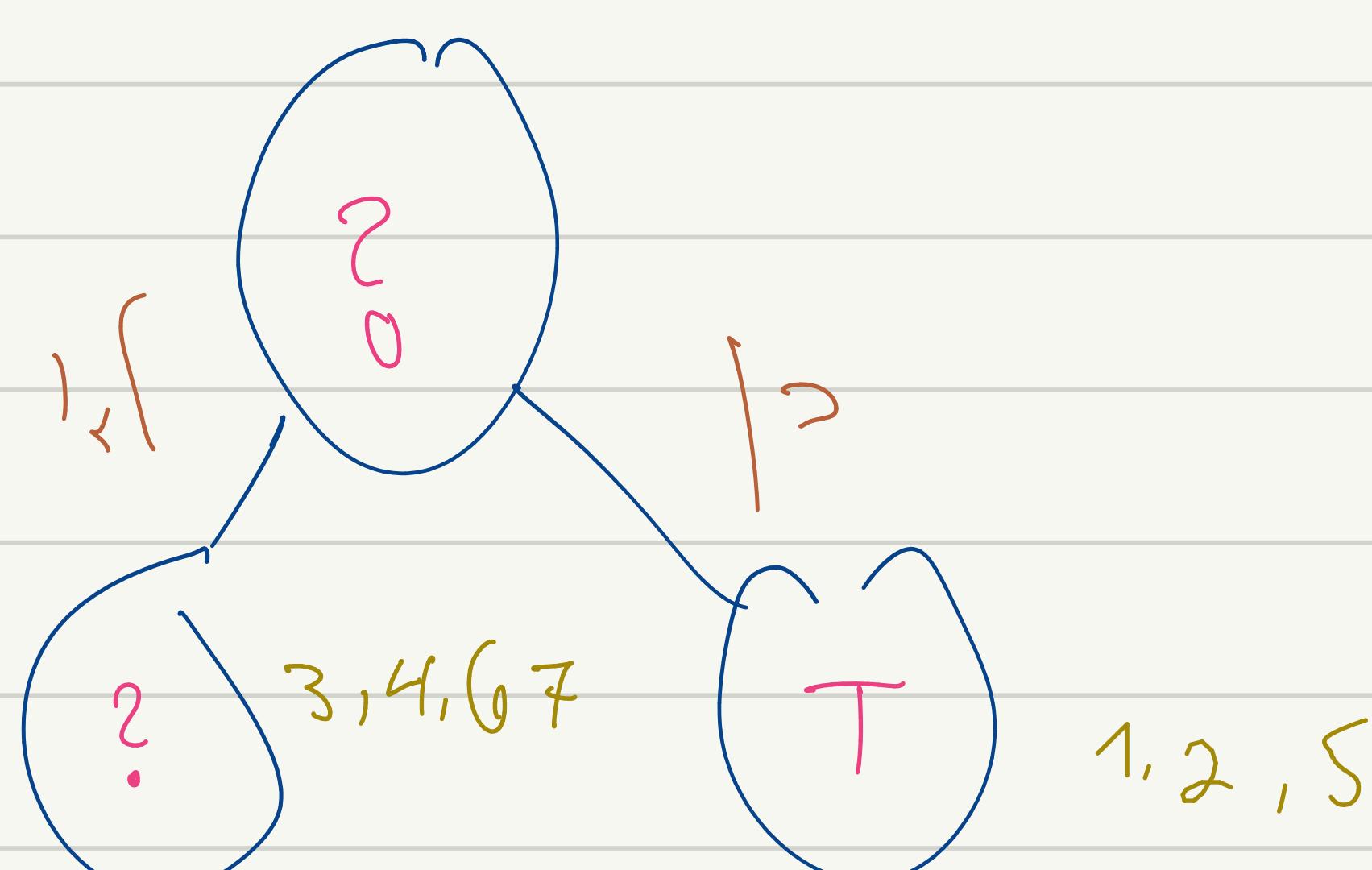
1) i, ii Does Danny like pizza?

	P_1	P_2	P_3	P_4	P_5	P_6	P_7	$\neg P_1 \rightarrow P_2 \wedge P_3 \vee P_4$	$\neg P_1 \wedge P_2 \vee P_3 \wedge P_4$	$\neg P_1 \wedge P_2 \wedge P_3 \wedge P_4$
1	T	T	T	T	T					
2	T	T	F		T					
3	T	F		T	F					
4	T	F	F		F					
5	F	T	T	T	T					
6	F	F	T		T					
7	F	F	F	F						

Attribute	$\frac{ V_{a=T} }{ V }$	$\frac{ V_{a=F} }{ V }$	$H(V_{a=T})$	$H(V_{a=F})$	$G - H(V)$
是否吸烟	$\frac{4}{7}$	$\frac{3}{7}$	$H\left(\frac{1}{2}\right)$	$H\left(\frac{2}{3}\right)$	- 0.96
年龄	$\frac{3}{7}$	$\frac{4}{7}$	$H(1)$	$H\left(\frac{3}{4}\right)$	- 0.46
性别	$\frac{4}{7}$	$\frac{3}{7}$	$H\left(\frac{3}{4}\right)$	$H\left(\frac{2}{3}\right)$	- 0.85

בְּרֵקָאָלִי, גַּגְגָה, שְׁפֵךְ, כְּלִילָה, וְעַמְּדָה, בְּרֵקָאָלִי, גַּגְגָה, שְׁפֵךְ, כְּלִילָה, וְעַמְּדָה.

כָּלְבִּים



עומק אינטגרל גיאומטרי

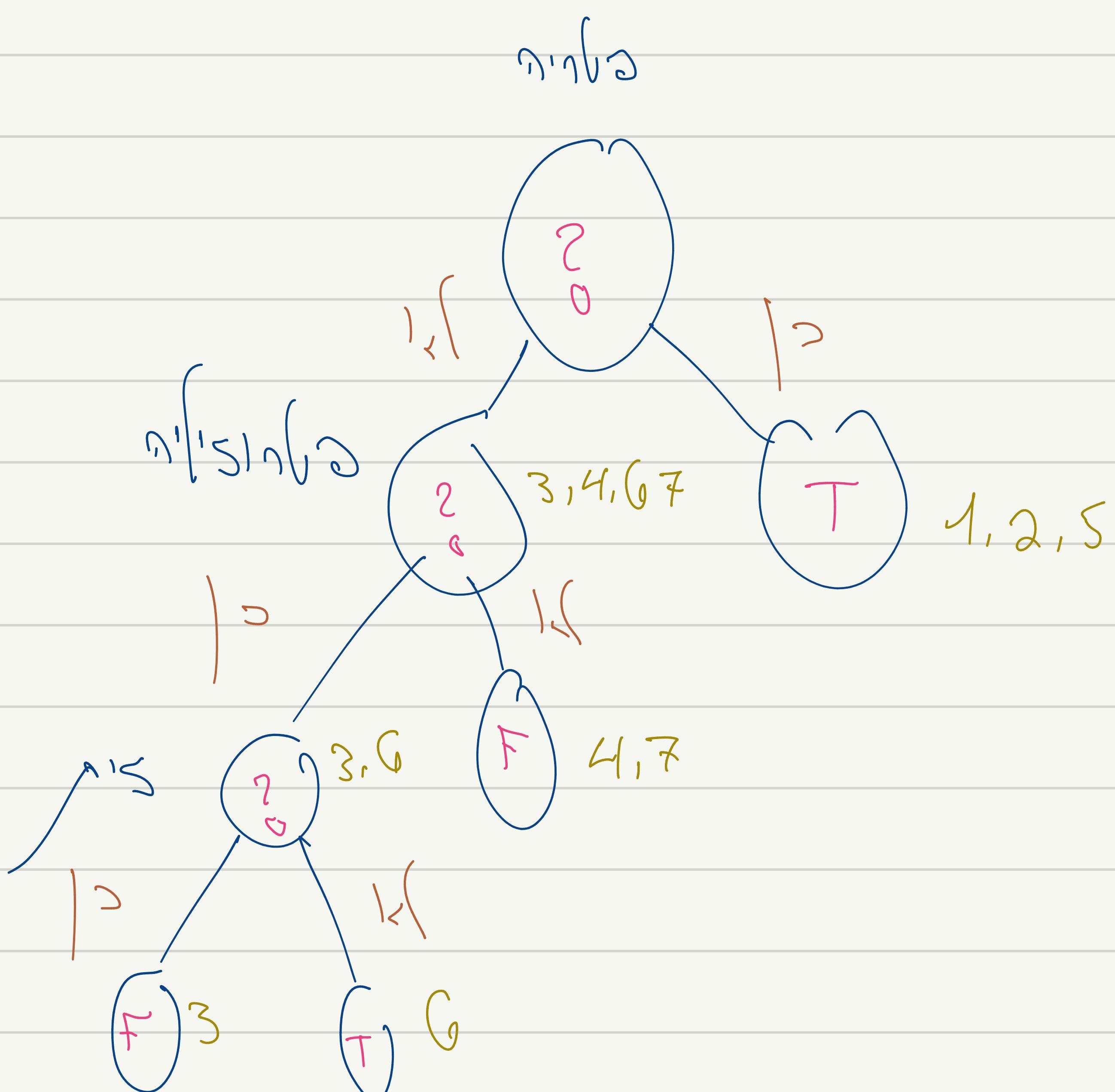
1	T	T	T	T
2	T	T	F	T
3	T	F	T	F
4	T	F	F	F
5	F	T	T	T
6	F	F	T	T
7	F	F	F	F

Attribute $\frac{|V_{\alpha=T}|}{|V|}$ $\frac{|V_{\alpha=F}|}{|V|}$ $H(\cdot)$ $H(V_{\alpha=T})$ $G - H(V)$

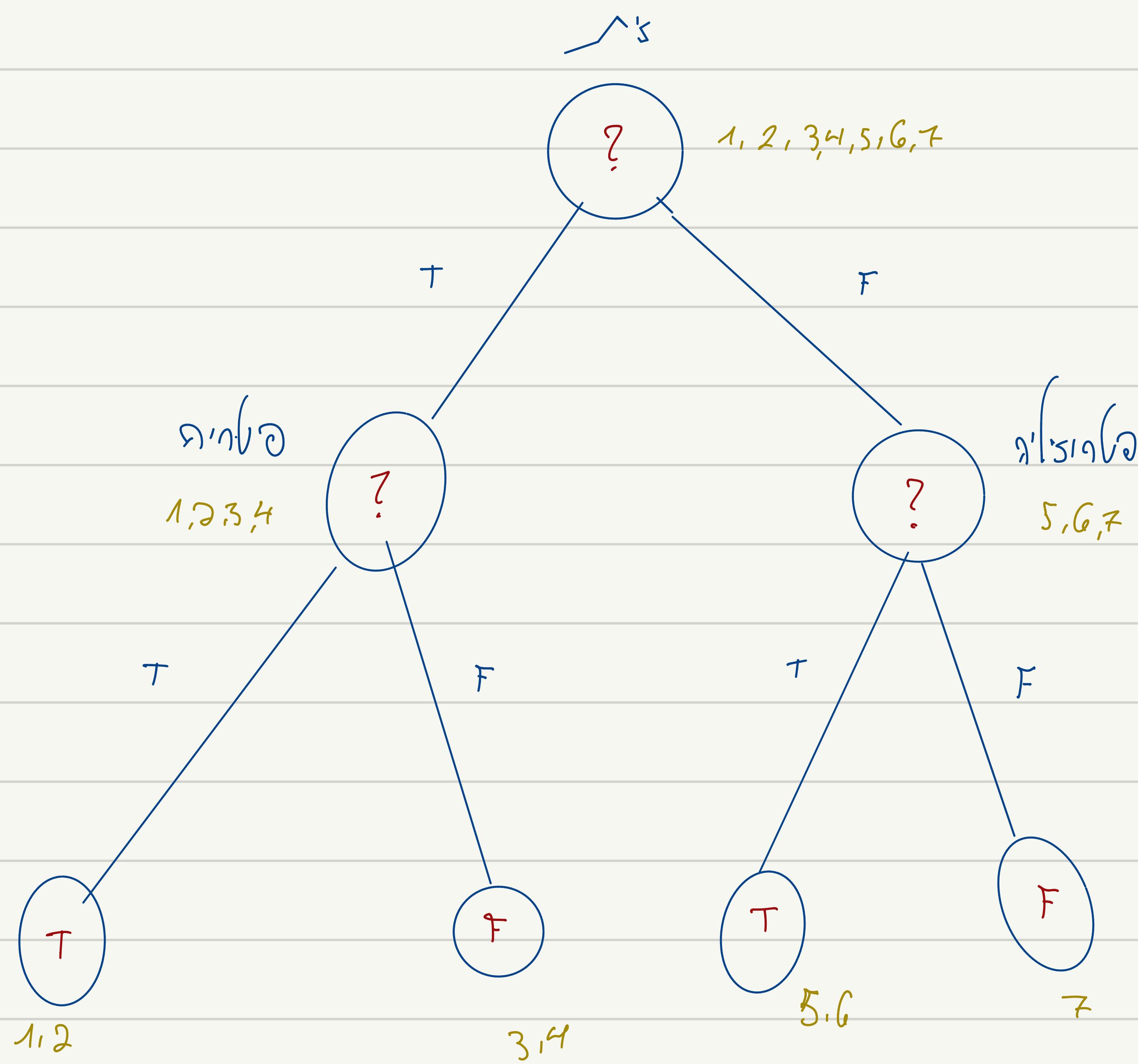
טז $\frac{2}{4}$ $\frac{2}{4}$ 0 1 $-\frac{1}{2}$

טז $\frac{2}{4}$ $\frac{2}{4}$ 1 0 -1

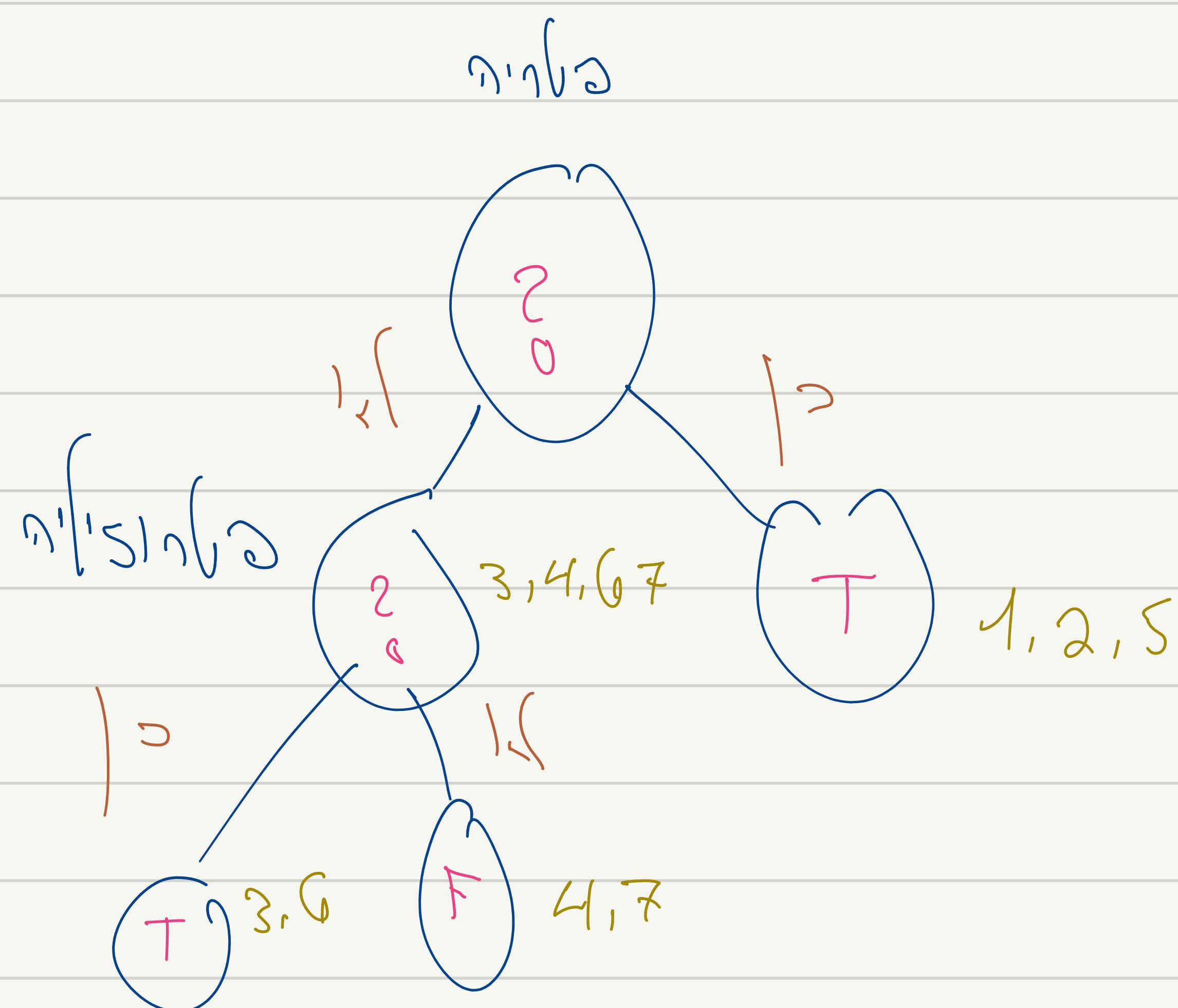
דעתם מהו גודל הערך?



iii



iv



the only wrong is sample number 3, thus:

$$L_S(h) = \frac{1}{7} \sum_{i=1}^7 \mathbb{1}\{y_i \neq h(x_i)\} = \frac{1}{7} \cdot (0 + \dots + 0 + 1) = \frac{1}{7}$$

2. Refute:

define $m=4$

is Dany love pizza?

$x = \text{js}$

$y = \text{love}$

js love

1 F F

2 F T

3 T T

4 T T

$$H(V) = \underbrace{-\frac{3}{4} \log_{\frac{3}{4}}}_{0.09} - \underbrace{\frac{1}{4} \log_{\frac{1}{4}}}_{0.15} = 0.244$$

$$H(V_{a=F}) = -\frac{1}{2} \log\left(\frac{1}{2}\right) - \frac{1}{2} \log\left(\frac{1}{2}\right) = -\log\left(\frac{1}{2}\right) = 0.301$$

$$\Rightarrow H(V) < H(V_{a=F})$$

$$\Rightarrow H(V) < H(V_{a=F})$$



3)

1.

ds model	A	B	C
i.	Yes	no (2)	no (4)
ii	no (1)	Yes	no (1)
iii	Yes	no (3)	Yes
iv	Yes	Yes	Yes

(1) Because there is always
a majority for the second color.

(2) Because in $x=3$ ($y=0$) it's

Wrong

(3) Because there isn't have one linear line that separates the groups.

(4) Because the closest point is always of the second color.

2.

i there is no change,

because the rotation is no

effect about distance between

the points.

$$\text{proof : } d(Qx, Qy) = \|Qx - Qy\| = \|Q(x - y)\| = \|x - y\| = d(x, y)$$

ii same answer as before.

iii there is no difference,

because still impossible to separates

the groups.

iv no change, because always

can to divide for 4 leaves.

B and C, they depend.

If we rotate in multiples of 90 degrees,

then we still can to divid in division

of x and y. else, we'll need divide more

than 4 parts (leaves). and they asked until

4 leaves.