## 1. Fill in the blanks:

Decim	al Octal	Hex	Binary
a) 13			
b) 57005	(skip octal)		(skip binary conversion for this number)
c) 51966	(skip octal)		(skip binary conversion for this number)
d)	012		(skip binary conversion for this number)
e) 303		_	
f)		0x1234	
g)		0x07d7	
1 \		0xffff	
i)		0x8000	

2. You have graduated from Koç and taken over your family's grilled-colon (kokoreç) business. You realize that to be competitive in the grilled-colon market these days, you will have to automate the grilled-colon carts. The carts have four sensors (A through D) and a big red light that indicates a problem. Your task is to design the circuitry to turn on the light when appropriate.

The truth table for the light is given to you below.

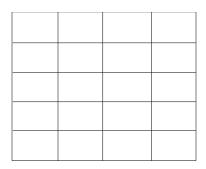
A	В	C	D	Light
0	0	0	0	1
0	0	0	1	0
0	0	1	0	1
0	0	1	1	0
0	1	0	0	X
0	1	0	1	X
0	1	1	0	1
0	1	1	1	X
1	0	0	0	0
1	0	0	1	1
1	0	1	0	0
1	0	1	1	1
1	1	0	0	1
1	1	0	1	0
1	1	1	0	1
1	1	1	1	0

a. Draw the corresponding Karnaugh map for the Light output.

Light

AB

CD



b. Determine the minimal equation for Light from the Karnaugh map.

Light =

c. Draw the logic circuitry (at gate level, using AND, OR and NOT gates) for the Light function.