Quiz 3 – EECS 270, Spring '13

Name: _**KEY**_   unique name: _**Key**_

Honor code:
I have not given or received aid on this quiz, nor have I observed anyone else doing so:
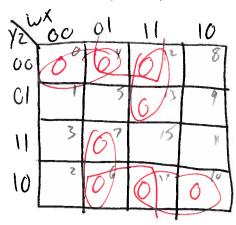
Sign here:_**KEY**_

This quiz is graded out of 100 points and is worth about 3% of your class grade. You will have **20** minutes for this quiz. *Closed everything including calculators!* To receive partial credit, work must be shown.

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1. Find the minimum sum-of-products of $\Sigma_{(a,b,c,d)}=(0,1,2,3,7,9,11,14)$ using a K-map. Show your work and clearly circle your answer. **[40]**

$$\overline{a}\,\overline{b} + \overline{b}\,d + \overline{a}\,c\,d + a\,b\,c\,\overline{d}$$

2. Find the minimum **product-of-sums** of $\Sigma_{(w,x,y,z)}=(1,2,3,5,8,9,11,15)$ using a K-map.
   Show your work and clearly circle your answer. **[30]**

$$(w+y+z)\cdot(\overline{w}+\overline{x}+y)\cdot$$
$$(w+\overline{x}+\overline{y})\cdot(\overline{w}+\overline{y}+z)$$

3. Design a state transition diagram which has one input "X" and one output "Y". The
   output should go high if one or more of the last two inputs have been a "1", otherwise
   the output should be zero. **[30, 10 points are for finding a minimal solution]**