1. More on Boolean function forms
    a. Boolean function from last time
        i. True when either, but not both, of the first two variables is true
        ii. Truth table below

Index	A	B	C	f(A, B, C)	Minterm	Maxterm
0	0	0	0	0	$m_0 = \overline{A}\overline{B}\overline{C}$	$M_0 = A + B + C$
1	0	0	1	0	$m_1 = \overline{A}\overline{B}C$	$M_1 = A + B + \overline{C}$
2	0	1	0	1	$m_2 = \overline{A}B\overline{C}$	$M_2 = A + \overline{B} + C$
3	0	1	1	1	$m_3 = \overline{A}BC$	$M_3 = A + \overline{B} + \overline{C}$
4	1	0	0	1	$m_4 = A\overline{B}\overline{C}$	$M_4 = \overline{A} + B + C$
5	1	0	1	1	$m_5 = A\overline{B}C$	$M_5 = \overline{A} + B + \overline{C}$
6	1	1	0	0	$m_6 = AB\overline{C}$	$M_6 = \overline{A} + \overline{B} + C$
7	1	1	1	0	$m_7 = ABC$	$M_7 = \overline{A} + \overline{B} + \overline{C}$

    b. Sum-of-products
        i. $f = \overline{A}\overline{B}\overline{C} + \overline{A}BC + A\overline{B}\overline{C} + A\overline{B}C = m_2 + m_3 + m_4 + m_5$
        ii. Can simplify using equivalence laws to reduce number of gates

    c. Product-of-sums

        i. Can also simplify using laws of equivalence

2. Karnaugh maps

    a. Hamming distance

		AB			
		00	**01**	**11**	**10**
C	**0**	0	0	d	0
	1	1	0	d	0

Three variable Karnaugh map

		AB			
		00	**01**	**11**	**10**
CD	**00**	0	0	0	1
	01	1	1	0	1
	11	d	0	d	0
	10	d	0	d	0

Four variable Karnaugh map

3. Terminology
    a. Literal

    b. Don't cares

    c. Implicant

    d. Prime implicant

        i. Essential prime implicant

    e. Cover

    f. Cost of a circuit

4. Minimization

    a. Generate all prime implicants

    b. Eliminate prime implicants that overlap until you find the essential implicants

5. Examples
   a. $f_1 = m0 + m1 + m4 + m5 + m7 = \Sigma(0, 1, 4, 5, 7)$

C \ AB	00	01	11	10
0				
1				

   b. $f_2 = \Sigma(6, 8, 9, 10, 11, 12, 13, 14)$

CD \ AB	00	01	11	10
00				
01				
11				
10				

   c. Further example with don't cares and wrapping
      i. $f_3 = m0 + D2 + D5 + D7 + m8 + m10$

CD \ AB	00	01	11	10
00				
01				
11				
10				

   d. Whether or not don't cares are included depends on your desired use case