Review for Test 1:

Monday, September 23, 2019 10:27 AM

truth tables:

is $\overline{\bar{A}\bar{B}}\,(\bar{A}+\bar{B})$ logically equivalent to zero?

A	B	$\bar{A}$	$\bar{B}$	$\bar{A}\bar{B}$	$\overline{\bar{A}\bar{B}}$	$\bar{A}+\bar{B}$	$\overline{\bar{A}\bar{B}}\,(\bar{A}+\bar{B})$
0	0	1	1	1	0	1	0
0	1	1	0	0	1	1	1
1	0	0	1	0	1	1	1
1	1	0	0	0	1	0	0

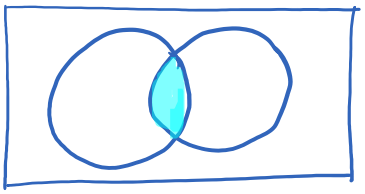
NO

simplify $(\bar{p} \vee \bar{q}) \wedge (\bar{p} \vee q)$

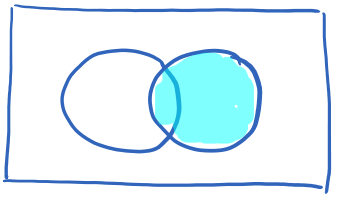
p	q	$\bar{p}$	$\bar{q}$	$\bar{p} \vee \bar{q}$	$\bar{p} \vee q$	$(\bar{p} \vee \bar{q}) \wedge (\bar{p} \vee q)$
0	0	1	1	1	1	1
0	1	1	0	1	1	1
1	0	0	1	1	0	0
1	1	0	0	0	1	0

$\bar{p}$

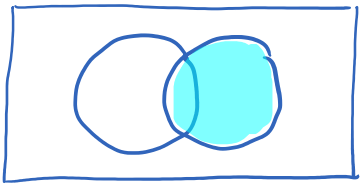
represent $\overline{q \vee (p \wedge q)}$ on a Venn diagram by shading in the appropriate regions. Show intermediate steps on separate sketches and clearly label them to get full credit.



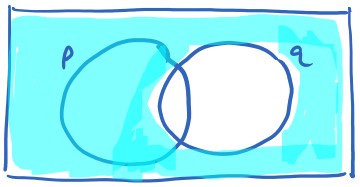
$p \wedge q$



q

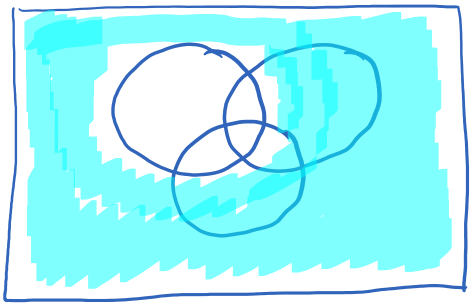


$q \vee (p \wedge q)$

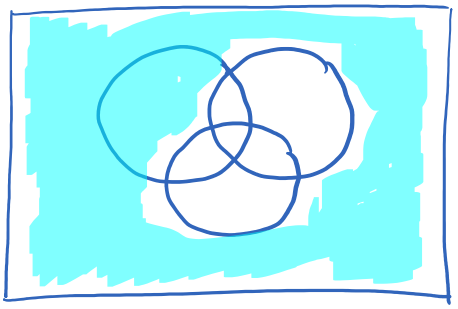


$\overline{q \vee (p \wedge q)}$

same instructions for $\overline{\bar{p} \vee (\bar{q} \wedge \bar{r})}$

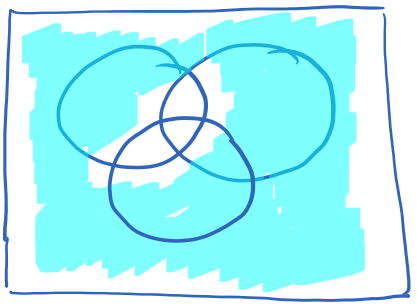


$\bar{p}$

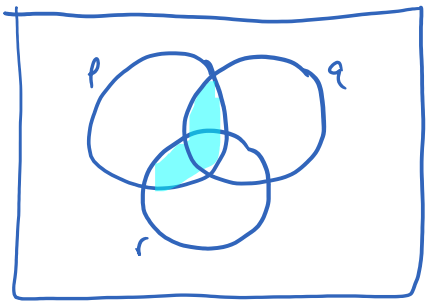


$\bar{q} \wedge \bar{r}$

$\bar{p}$ $\bar{q} \wedge \bar{r}$



$\bar{p} \vee (\bar{q} \wedge \bar{r})$



$\overline{\bar{p} \vee (\bar{q} \wedge \bar{r})}$

What values can n take if 888_n is a legal number?

$n > 8$
$n \geq 9$

$n = 9, 10, 11, \ldots$

base 4 has digits 0, 1, 2, 3

negation of all:

you have 5 marbles, which are either

red or blue

how many can be blue? 0, 1, 2, 3, 4, 5

if all marbles are blue, then 5 are blue

if not all are blue, then can have
0, 1, 2, 3 or 4 blue

not all : at least one is not

none = 0