

# Assignment\_01

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2.

Only c) and e) are propositions.

c) and e) are both false.

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4.

a) Jennifer and Teja are not friends.

b) There are not 13 items in a baker's dozen.

c) Abby does not send more than 100 text messages every day.

d) 121 is not a perfect square.

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6.

a) true

b) true

c) false

d) false

e) false

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8.

a) I did not buy a lottery ticket this week

b) Either I bought a lottery ticket this week or won the million dollar jackpot.

c) If I bought a lottery ticket this week, then I won the million dollar jackpot on Friday.

d) I bought a lottery ticket and won the million dollar jackpot.

- e) I bought a lottery ticket if and only if I won the million dollar jackpot.
  - f) If I did not buy a lottery ticket this week , then I did not win the million dollar jackpot.
  - g) I did not buy a lottery ticket this week and I did not win the million dollar jackpot.
  - h) Either I did not buy a lottery ticket this week, or else I did buy a lottery ticket and won the million dollar jackpot.
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**12.**

- a) If you have the flu , then you miss the final examination.
  - b) You do not miss the final examination if and only if you pass the course.
  - c) If you miss the final examination , then you do not pass the course.
  - d) You have the flu of you miss the final examination , or you pass the course.
  - e) If you have the flu or you miss the examination , then you do not pass the course.
  - f) Either you have the flu and you miss the final examination , or you do not miss the examination and you pass the course.
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**16.**

- a) true
  - b) flase
  - c) true
  - d) flase
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**22.**

- a) If you get promoted , then you wash boss's car.
- b) If the wind are form south , then there is a thaw.
- c) If you broughy the computer less than a year ago , then a sufficient condition for the warranty is good.
- d) If Willy cheats , then he gets cought.
- e) If you pay a subscription fee , then you can acess the website.

f) If you know the right people , then you geet elected follows.

g) If she is on a boat , then Carol gets seasick.

30.

a) 4

b) 8

c) 64

d) 32

34.

a)

p	p Exclusive or p
T	F
F	F

b)

p	not p	p Exclusive or not p
F	T	T
T	F	T

c)

p	not q	p Exclusive or not q
T	T	F
T	F	T
F	T	T
F	F	F

d)

not p	not q	not p Exclusive or not q
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<b>not p</b>	<b>not q</b>	<b>not p Exclusive or not q</b>
T	T	F
T	F	T
F	T	T
F	F	F

e)

<b>p</b>	<b>q</b>	<b>not q</b>	<b>p Exclusive or q</b>	<b>p Exclusive or not q</b>	<b>(p Exclusive or q) <math>\vee</math> (p Exclusive or not q)</b>
T	T	F	F	T	T
T	F	T	T	F	T
F	T	F	T	F	T
F	F	T	F	T	T

f)

<b>p</b>	<b>q</b>	<b>not q</b>	<b>p Exclusive or q</b>	<b>p Exclusive or not q</b>	<b>(p Exclusive or q) and (p Exclusive or not q)</b>
T	T	F	F	T	F
T	F	T	T	F	F
F	T	F	T	F	F
F	F	T	F	T	F