

Name :

**Math 170 – 5 –**

A tautology is a boolean expression that is always true no matter what the variables in it are (for example  $p$  or (not  $p$ ) is true for every truth value of  $p$ ). Write down a tautology.

Express 124 in base 2.

Draw the *logic device* for  $(x \text{ and } y) \text{ or } (\text{not } z)$ .

Design a logic device to add two numbers of one digit each in base 2.

(optional) Design a logic device to add two numbers of 5 digits in base 2.