

Name _____

1-4

Lesson Master

Questions on SPUR Objectives
See Student Edition pages 71–75 for objectives.

REPRESENTATIONS

Objective K

1.

a. Draw a logic network to represent the statement p and (q or not r).

b. Fill in the input-output table below for the network you drew in Part a.
- | p | q | r | $NOT\ r$ | q or $NOT\ r$ | output |
|-----|-----|-----|----------|-----------------|--------|
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| | | | | | |
| | | | | | |
2.

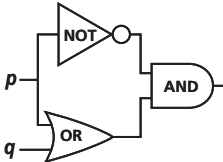
Consider the network at the right. What is the output if

a. the input for p is 0 and the input for q is 1? _____

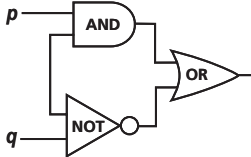
b. the input for p is 1 and the input for q is 0? _____
3.

Write the logical statement that corresponds to the network in Question 2. _____
4.

Use input-output tables to determine if the networks below are functionally equivalent. _____



| p | q | | | | |
|-----|-----|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



| p | q | | | | |
|-----|-----|--|--|--|--|
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| | | | | | |
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5.

To obtain a driver’s license in the state of Illinois, new applicants must pass drivers’ tests and present documents that verify their signature, birth date, social security number, and Illinois residency. Signature and birth date can be verified with either a passport (P) or both an out-of-state driver’s license (O) and a birth certificate (B). A social security card (S) can be used to verify social security number. If 1 = the applicant brought the document and 0 = the applicant did not bring the document, complete the input-output table at the right to determine which combinations of documents an applicant can bring and meet the requirements for verifying signature, birth date, and social security number. Let an output of “1” mean requirements are met and an output of “0” mean requirements are not met. One column and two rows are filled in for you.
- | O | B | P | S | output |
|---|---|---|---|--------|
| 1 | | | | |
| 1 | | | | |
| 1 | | | | |
| 1 | 1 | 0 | 0 | 0 |
| 1 | | | | |
| 1 | | | | |
| 1 | | | | |
| 1 | | | | |
| 0 | | | | |
| 0 | | | | |
| 0 | | | | |
| 0 | 1 | 0 | 0 | 0 |
| 0 | | | | |
| 0 | | | | |
| 0 | | | | |
| 0 | | | | |