

# Activity – Propositions & Systems

Name: \_\_\_\_\_  
Name: \_\_\_\_\_  
One CM: \_\_\_\_\_

1) Let  $p$  and  $q$  be the propositions “Swimming at the New Jersey shore is allowed” and “Sharks have been spotted near the shore,” respectively.

- Express  $p \rightarrow \sim q$  as an English sentence.

2) Determine if the following conditional statement is true or false and indicate why.

- If  $1 + 1 = 3$ , then  $2 + 2 = 4$ .

3) Let  $p$ ,  $q$ , and  $r$  be the propositions

$p$  : Grizzly bears have been seen in the area.

$q$  : Hiking is safe on the trail.

$r$  : Berries are ripe along the trail.

Write the following proposition using  $p$ ,  $q$ , and  $r$  and logical connectives (including negations).

- Hiking is not safe on the trail whenever grizzly bears have been seen in the area and berries are ripe along the trail.

4) Construct a truth table for the following compound proposition.

- $(p \vee \sim q) \rightarrow q$

5) Express the system specification given below using the propositions  $p$  is “The message is scanned for viruses” and  $q$  is “The message was sent from an unknown system” together with logical connectives (including negations).

- “The message is scanned for viruses whenever the message was sent from an unknown system.”