MTH 225 Weekly Practice 3 Due: 11:59pm ET Sunday, September 27, 2020

Directions:

- Complete the exercises below and either write up or type up your solutions. Solutions must be submitted as PDF or Word documents, uploaded to the appropriate assignment area on Blackboard.
- If you choose to submit handwritten work, it must be neat and legible; if you do your handwritten work on paper, it must be **scanned to a PDF file** and submitted to Blackboard. Instructions and practice for scanning work to PDFs is given in the Startup Assignment. **Do not just take a picture, and do not submit a graphics file (JPG, PNG, etc.)** — such submissions will not be graded.
- Your work will be graded using the EMRN rubric and evaluated **not just on the basis of a right or wrong answer, but on the quality, completeness, and clarity of your work**. Therefore you need to show all work and explain your reasoning on each item.
- Every item must have a good-faith effort at a complete and correct response. If any item is left blank, or shows minimal effort (such as answering "I don't know"), or is significantly incomplete, the entire assignment will be graded "N" (Not Assessable) and you will have to spend a token to revise it.

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1. 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 these English propositions using p, q, and r and logical connectives (including negation). You do not need to justify your work *except for the last statement*, but all answers must be correct.

   (a) Berries are ripe along the trail, but grizzly bears have not been seen in the area.

   (b) Grizzly bears have not been seen in the area and hiking along the trail is safe, but berries are ripe along the trail.

   (c) If berries are ripe along the trail, then hiking is safe along the trail if and only if grizzly bears have not been seen in the area.

   (d) Hiking is not safe on the trail whenever grizzly bears have been seen in the area. (*On this one, please explain how you got your answer.*)

2. Construct a truth table for each of the following propositions:

   (a) $p \wedge (\neg p)$

   (b) $(p \vee q) \rightarrow (p \wedge q)$

   (c) $(p \vee q) \wedge (\neg r)$

   (d) $(p \leftrightarrow q) \vee ((\neg q) \rightarrow r)$

3. *(Often in Weekly Practice, the last question will ask you to think about your work this week and respond to a survey. This item is not only needed for the Weekly Practice, but completing it will also earn you 1 Engagement Credit.)* Think back over your work this week and how things went for you in class. Then go to this form and complete the survey: http://gvsu.edu/s/1sC.