Math 113 Name: Kelli

MATH 113, QUIZ #1
SEPTEMBER 1

5 pts

1. Multiple choice. Select ALL that apply (circle the bullet point next to correct answers). If you must miss a midterm,...

   - you will fail this class.
   - you can make it up, as long as you have documentation for something very serious, like emergency brain surgery.
   - your final exam will count more.
   - the highest course grade you can possibly get will be a B.
   - you should let Kelli know ASAP, preferably before the exam happens.

3 pts

2. What are 3 appropriate ways to get in touch with Kelli?

   - office hours
   - email
   - Piazza
   - talk after class

1 pt

3. What should you do if you need to miss class on a day homework is due?

   Send HW w/ a friend, make sure you talk to a classmate about missed material.

3 pts.

4. List 3 things you should do if you want to do well in this class.

   - Show up
   - Read ahead of time
   - Complete all assignments
   - Get study friends!!

etc.

5pts

5. Multiple choice – select all that apply (circle the bullet point next to correct answers). Which of the following are equivalence relations on the specified set? Answers only, no justification required.

- In $\mathbb{Z}^+$, congruence modulo 7.
- In $\mathbb{R}$, $x \sim y$ iff $|x| = |y|$.
- In $\mathbb{Z}$, $x \sim y$ iff $x \geq y$.
- In $\mathbb{R}$, $x \sim y$ iff $|x + y| \leq 5$.
- In the set of animals in the ocean, $x \sim y$ iff x and y have the same number of gills.

5pts

6. Multiple choice – select all that apply (circle the bullet point next to correct answers). Which of the following are binary operations on the specified set? Answers only, no justification required.

- For all $a, b \in \mathbb{Z}^+$, $a * b = 2^{ab} + 1$.
- For all $a, b \in \mathbb{Z}^+$, $a * b = \frac{a}{b}$.
- For all $a, b \in \mathbb{Q}$, $a * b = \frac{3a+b}{5}$.
- For all $a, b \in \mathbb{R}$, $a * b = a + b - 17$.
- For all a and b in the set $\{1, 2, 3, 4, 5, 6\}$, $a * b = a + b$.

4pts

7. Let S be the set of students in our class. Give an example of an equivalence relation on S. Choose an equivalence relation which partitions S into 3 to 10 cells/equivalence classes (we have 40 total students, fyi). Answers only, no justification required.

Eg. $x \sim y$ iff x and y are in the same class (fresh/soph/junior/senior)

4pts.

8. Let S be the set of students in our class. Give an example of a binary operation on S. Answers only, no justification required.

Eg. $x * y$ = taller student of x & y.
(measure precisely enough so no two are exact same height)

or

$x * y$ = Kevin M $\forall\, x, y \in S$.