Northern Illinois University
Testing Services and Department of Mathematical Sciences
Math 201 Proficiency Examination

Eligibility

Persons with an extensive background in mathematics may consider satisfying the MATH 201 prerequisite to MATH 402 by passing an examination demonstrating proficiency in the content of MATH 201. **An application to take the examination must be completed.** Once you have registered to take the MATH 201 Proficiency Exam, Testing Services will reach out to the Department of Mathematical Sciences, they will determine if you are approved to be tested. After review of your testing request, Testing Services will reach out to you to let you know if you have been approved to test or not. If you are approved to test, we will work with you to determine at testing date.

Registration Procedure

This exam is administered by NIU Testing Services and must be scheduled in advance with Testing Services, email: testing@niu.edu, or phone: 815-753-1203. Once you register to test, Testing Services will check with the Department of Mathematical Sciences to see if they will approve you to be tested. If approved, we will work with you to determine a testing date. Make sure you bring your photo ID with you to test.

Topics Included in The Examination

Note: each topic includes **theory**; computational facility is **not** sufficient.

- Problem-solving heuristics
- Set Theory
- The whole number system
- Number Theory
- Rational numbers (fractions and decimals)
- Ratio and Proportions (including percents)
- Number systems (including signed numbers)
- Geometry and Measurement
- Statistics and Probability

Form of the Exam

The exam consists of 50 multiple choice questions. As noted above, computational facility is not sufficient. Sample questions appear on the reverse of this sheet. You will have two hours to complete the exam. The passing score is 70%. The use of a calculator is **not** permitted for this exam.

Preparation for the Exam

Preparation for the exam should be taken seriously; fewer than 1/3 of those who have recently tested have passed. To prepare for the exam, you may wish to use the current textbook for MATH 201. This textbook may be obtained from the textbook section of the University bookstore.

Test Results

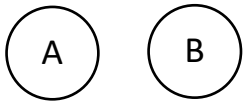
You will receive written notification of your results within 10 days of the examination. If you pass, you will receive three hours of proficiency credit for MATH 201. There is no penalty for failing; however, only one attempt at the examination is allowed.

Additional Questions?

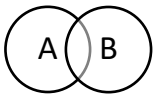
Contact: Chair, Teacher Education Committee, Department of Mathematical Sciences. Telephone: 815-753-0566. **Note:** Students may not earn proficiency credit for a course for which they have received credit; nor may they receive proficiency credit for courses which substantially overlap or are prerequisite to any in which they are enrolled or for which they have received credit. A student may attempt to gain proficiency credit for a particular course only once. (Academic Regulations – Proficiency Examinations, Northern Illinois University undergraduate bulletin.

1. For which of the diagrams does $n(A \cap \overline{B}) = n(A) - n(B)$? [Here $n(A) =$ number of members of A, $\overline{B}$ = complement of B.]

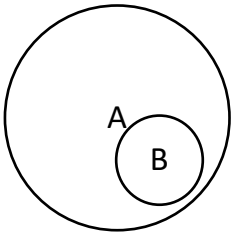
a. two separate equally sized circles A and B



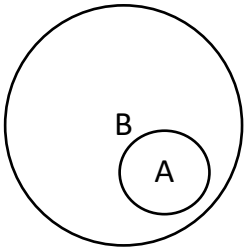
b. two equally sized circles A and B overlapping



c. smaller circle B is within larger circle A



d. smaller circle A is within larger circle B



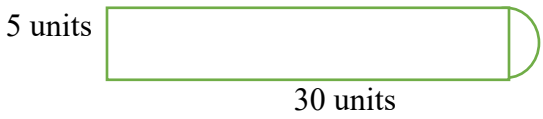
2. Find $24_5 \times 32_5$.

(a) 768_5 (b) 1323_5 (c) 1423_5 (d) 231_5

3. Which of the following properties holds for <u>division of rational numbers</u>?

(a) Identity (b) Closure (c) Commutativity (d) Associativity

4. Approximate the area of the region below.



Picture description of the region: rectangle with vertical line measuring 5 units and horizontal line measuring 30 units. On the end of one of the vertical sides of this same rectangle is a semicircle attached to the rectangle.

(a) 159.8 sq. units (b) 169.6 sq. units (c) 189. 3 sq. units (d) 228.5 sq. units

5. If the ratio of boys to girls in a class is 3:5, and there are 40 students in the class, how many are boys?

(a) 15 (b) 16 (c) 20 (d) 24

Key: 1. (c), 2. (c), 3. (a), 4. (a), 5. (a)

10/18/2023