

MTH 015 : BASIC MATHEMATICS

Transcript title

Basic Mathematics

Credits

4

Grading mode

Standard letter grades

Total contact hours

40

Lecture hours

40

Recommended preparation

Minimum placement Math Level 4.

Course Description

Introduces mathematics and its application, explains language and symbols used in math, develops concepts in whole numbers, fractions, decimals, percents, ratio, proportion, and integers, while emphasizing study and learning skills necessary for success in math courses and overcoming anxiety toward math.

Course learning outcomes

1. Demonstrate fluency with basic whole number and fraction computations.
2. Demonstrate conceptual understanding of basic decimal and percent applications.
3. Recognize ratio and proportion problems, and use appropriate techniques to solve them.
4. Perform integer computations.
5. Apply learning strategies that support successful course completion.
6. Model and solve applied and theoretical mathematical problems including area and perimeter of rectangles, and money.

Content outline

1. Whole Numbers: Demonstrate fluency with basic whole number and fraction computations
2. Write the word name for a number and write the number for a word name
3. Use rectangles to model multiplication
4. Describe and use divisibility rules for 2, 3, 4, 5, 6, 8, 9, and 10
5. Distinguish between prime and composite numbers
6. Use divisibility rules to determine factors of a given number
7. Write numbers as a product of prime numbers (with and without exponents)
8. Determine the least common multiple given two or three numbers
9. Use correct order of operations to simplify expressions involving whole numbers
10. Use symbolic notation for "less than" and "greater than" to compare whole numbers

11. Round whole numbers to the nearest ten, hundred, or thousand
12. Know that division by zero is undefined
13. Evaluate expressions with whole number exponents Fractions: Demonstrate fluency with basic whole number and fraction computations
14. Use fraction kits or strips to describe concepts and computations involving fractions
15. Convert between mixed numbers and improper fractions
16. Simplify a fraction to lowest terms
17. Create equivalent fractions with a least common denominator given two or three fractions
18. Perform computations and solve problems involving fractions without the use of a calculator
19. Use correct order of operations to simplify expressions involving fractions
20. Use symbolic notation for "less than" and "greater than" to compare fractions Decimals and Percents: Demonstrate conceptual understanding of basic decimal and percent applications
21. Write a word name for a decimal
22. Convert between fractions and decimals
23. Compute with decimals in context, primarily money based
24. Write a percent as a fraction
25. Write a percent as a decimal
26. Know or be able to convert between equivalent fraction, decimal and percent forms of common fractions (denominators of 2, 3, 4, 5, 6, 8 and 10)
27. Solve percent problems of the form, "What is p% of w?"
28. Round decimals to tenths, hundredths, or thousandths Ratio and Proportion: Recognize ratio and proportion problems, and use appropriate techniques to solve them
29. Use a ratio to compare two quantities with the same units
30. Use a rate to compare two quantities with different units
31. Write proportions
32. Find the missing number in a proportion
33. Solve applied problems using proportions Integers: Perform integer computations
34. Add, subtract, multiply and divide integers. Applications: Model applied and theoretical mathematical problems including area and perimeter of rectangles, and money
35. Solve applied problems involving whole numbers, fractions and decimals. Student Success Strategies: Apply learning strategies that encourage successful course completion
36. Assess entry level attitudes and habits related to successful course completion
37. Identify key steps in course preparation
38. Classroom engagement
39. Class notes and text material
40. Homework
41. Test preparation
42. Practice a variety of test study strategies

Required materials

Required textbook(s).