

Table of Contents

Suggestions for the Day of the Exam	5
Multiple Choice Test Taking Strategies	6
Strategies for the Oklahoma Examinations for Oklahoma Educators	8
The Oklahoma Examinations for Oklahoma Educators: General Information	12
Learner-Centered Proficiencies	13
Cooperative Learning.....	14
Bloom’s Taxonomy of Levels of Thinking	15
Strides Toward Oklahoma’s Education Goals.....	16
Relevant Oklahoma Legislation.....	18
Oklahoma Criteria for Effective Teaching and Administrative Performance	20
Field 25: Middle Level / Intermediate Mathematics Test Framework	22
Discussion of Competencies.....	27
Competency 0001—Understand mathematical problem solving, connections among mathematical ideas, and the use of mathematics in other disciplines	27
Competency 0002—Understand reasoning processes, including inductive and deductive logic, and spatial reasoning.	29
Competency 0003—Understand and communicate the meaning of mathematical concepts and symbols.	32
Competency 0004—Understand number theory and the principles and properties of the real and complex number systems.	34
Competency 0005—Understand the historical development of mathematics.....	39
Competency 0006—Understand the principles and properties of algebraic operations and relations	41.
Competency 0007—Apply principles and techniques of algebra to model and solve problems involving linear relations.....	43
Competency 0008—Understand and apply methods for using graphic representations to analyze and interpret linear relations.....	48
Competency 0009—Apply principles and techniques of algebra to model and solve problems involving quadratic relations.....	49
Competency 0010—Understand and apply methods for using graphic representations to analyze and interpret quadratic relations.....	55
Competency 0011—Understand the principles and properties of polynomial, rational, radical, absolute value, exponential, and logarithmic functions; and apply algebraic and graphic techniques to problem-solving situations involving these functions.	56
Competency 0012—Understand measurement and the properties of two- and three-dimensional figures.....	69
Competency 0013—Understand the principles and properties of Euclidean geometry	71.
Competency 0014—Understand the principles and properties of coordinate geometry.....	73
Competency 0015—Apply mathematical principles and techniques to model and solve problems involving vector and transformational geometries.....	75
Competency 0016—Understand right triangle trigonometry and the conceptual foundations of calculus.	77
Competency 0017—Understand the principles, properties, and techniques of probability and their applications.....	80

Competency 0018—Understand the principles, properties, and techniques of statistics and their applications.....	83
Competency 0019—Understand how techniques of discrete mathematics (e.g., graphs, matrices, recurrence relations) are applied to model and solve problems.	86
Sample Problems	90
Constructed-Response Assignment Rubric.....	106
Instructions for Sample Constructed-Response Assignment.....	107
Sample Constructed-Response Assignment	108
Answers to Sample Problems	111
Miscellaneous Solutions	112
Glossary	113
References.....	123