

PSAE - MATHEMATICS

DAY 1

WEDNESDAY 4/27/11

TEST LENGTH: 60 minutes # OF QUESTIONS: 60 questions

<p>TOPICS TESTED ON THE ACT TEST</p>	<p>PRE-ALGEBRA/ELEMENTARY ALGEBRA <i>Pre-Algebra (23%).</i> Questions in this content area are based on basic operations using whole numbers, decimals, fractions, and integers; place value; square roots and approximations; the concept of exponents; scientific notation; factors; ratio, proportion, and percent; linear equations in one variable; absolute value and ordering numbers by value; elementary counting techniques and simple probability; data collection, representation, and interpretation; and understanding simple descriptive statistics.</p> <p><i>Elementary Algebra (17%).</i> Questions in this content area are based on properties of exponents and square roots, evaluation of algebraic expressions through substitution, using variables to express functional relationships, understanding algebraic operations, and the solution of quadratic equations by factoring.</p> <p>INTERMEDIATE ALGEBRA/COORDINATE GEOMETRY <i>Intermediate Algebra (15%).</i> Questions in this content area are based on an understanding of the quadratic formula, rational and radical expressions, absolute value equations and inequalities, sequences and patterns, systems of equations, quadratic inequalities, functions, modeling, matrices, roots of polynomials, and complex numbers.</p> <p><i>Coordinate Geometry (15%).</i> Questions in this content area are based on graphing and the relations between equations and graphs, including points, lines, polynomials, circles, and other curves; graphing inequalities; slope; parallel and perpendicular lines; distance; midpoints; and conics.</p> <p>PLANE GEOMETRY/TRIGONOMETRY <i>Plane Geometry (23%).</i> Questions in this content area are based on the properties and relations of plane figures, including angles and relations among perpendicular and parallel lines; properties of circles, triangles, rectangles, parallelograms, and trapezoids; transformations; the concept of proof and proof techniques; volume; and applications of geometry to three dimensions.</p> <p><i>Trigonometry (7%).</i> Questions in this content area are based on understanding trigonometric relations in right triangles; values and properties of trigonometric functions; graphing trigonometric functions; modeling using trigonometric functions; use of trigonometric identities; and solving trigonometric equations.</p>	<p><u>TIPS & INFORMATION</u></p> <p>YOU MAY USE A CALCULATOR (SEE POLICY BELOW)</p> <p>**WE STRONGLY SUGGEST YOU BRING A CALCULATOR**</p> <p>YOU MAY <u>NOT</u> USE A FORMULA SHEET OR A NOTE CARD</p> <p>ANSWER <u>ALL</u> QUESTIONS!</p> <p>YOU ARE NOT PENALIZED FOR GUESSING</p>
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Prohibited Calculators

The following types of calculators are prohibited:

- Calculators with built-in computer algebra systems
Prohibited calculators in this category include:
 - Texas Instruments: All model numbers that begin with **TI-89** or **TI-92** and the **TI-Nspire CAS**—Note: The TI-Nspire (non-CAS) is permitted.
 - Hewlett-Packard: **HP 48GII** and all model numbers that begin with **HP 40G**, **HP 49G**, or **HP 50G**
 - Casio: **Algebra fx 2.0**, **ClassPad 300** and **ClassPad 330**, and all model numbers that begin with **CFX-9970G**