



Fundamentals of College Algebra

Fact Sheet 2008

TEST INFORMATION

This test was developed to enable schools to award credit to students for knowledge equivalent to that which is learned by students taking the course. The school may choose to award college credit to the student based on the achievement of a passing score. The ultimate passing score for each examination is determined by the school. The school is provided with a recommended passing score established by a national committee of college faculty who teach this course. The DSST program is approved by the American Council on Education (ACE), and the ACE provides both a recommended passing score and a recommended number of credits that could be awarded to successful students. Some schools set their own standards for awarding credit and may require a higher score than the ACE recommendation. Students should obtain this information from the institution from which they expect to receive credit.

The use of nonprogrammable calculators is permitted during the test. Scratch paper for computations will be provided. A calculator function is available during computer-based exams.

CONTENT OUTLINE

The following is an outline of the content areas covered in the examination. The approximate percentage of the examination devoted to each content area is also noted.

Fundamentals of College Algebra Exam Content Outline

- I. **Fundamental Algebraic Operations – 4%**
 - A. Operations with algebraic expressions
 - B. Operations with polynomials
- II. **Factoring Polynomials over Real Numbers – 6%**
- III. **Rational Expressions – 7%**
- IV. **Exponential and Radical Expressions (including operations with positive, negative, and fractional exponents) – 8%**

- V. **Linear Equations – 12%**
 - A. Single variables
 - B. Operations with matrices
 - C. Methods of solving two and three variable systems
- VI. **Absolute Value Equations and Inequalities – 6%**
- VII. **Quadratic Equations and Inequalities – 12%**
 - A. Methods of solving
 - B. Quadratic forms
 - C. Solving quadratic inequalities
- VIII. **Equations Involving Radicals – 6%**
- IX. **Complex Numbers – 5%**
 - A. Conjugate
 - B. Basic operations
- X. **Functions – 20%**
 - A. Domain and range
 - B. Coordinate systems
 - C. Inverse functions
 - D. Operations and functions
 - E. Rational functions
 - F. Exponential and logarithmic functions
- XI. **Two Dimensional Graphing – 14%**

REFERENCES

The following references were used to create exam questions and may be useful as study materials. You are not allowed to use these references in the testing center.

1. *Algebra and Trigonometry Problem Solver*, 2007, Jerry R. Shipman, Research and Education Association, 61 Ethel Road, West Piscataway, NJ 08854, www.rea.com.
2. *Intermediate Algebra*, Eighth Edition, 2006, Margaret Lial, John Hornsby and Terry McGinnis, Addison-Wesley, 75 Arlington Street, Suite 300, Boston, MA 02116, www.aw-bc.com.

SAMPLE QUESTIONS

All test questions are in a multiple-choice format, with one correct answer and three incorrect options. You may want to review these

samples for the type of questions that may appear on the exam.

1. If $x^2 \neq 1$, then

$$\frac{1}{x^2 - 1} + \frac{1}{x + 1} =$$

A. $\frac{2}{x^2 + x}$

B. $\frac{x + 2}{x^2 - 1}$

C. $\frac{x}{x^2 - 1}$

D. $\frac{1}{x^2} + \frac{1}{x}$

2. Which of the following is a solution of the equation $x^2 + 3x - 2 = 0$?

A. 2

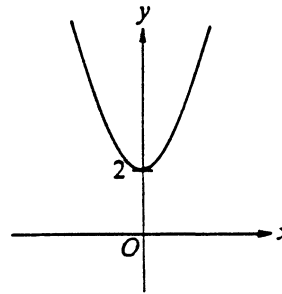
B. $\frac{3 - \sqrt{17}}{2}$

C. $\frac{-3 + \sqrt{17}}{2}$

D. $\frac{-3 + \sqrt{5}}{2}$

3. An experimental formula for the number of hours of sleep a child needs is $S = 13.5 - (y/3)$, where S is the number of hours of sleep needed and y is the age of the child in years. According to this formula, with each passing year, a child needs

- A. 1/3 hour less sleep
- B. 1/3 hour more sleep
- C. 1 hour less sleep
- D. 1 hour more sleep



4. Which of the following could be the equation of the graph above?

A. $y = 2x^2$

B. $y = -x^2 + 2$

C. $y = x^2 + 2$

D. $x = y^2 + 2$

5. $\sqrt{48a^3b^4} =$

A. $4ab^2\sqrt{3a}$

B. $8ab^2\sqrt{3a}$

C. $24ab^2\sqrt{a}$

D. $16a^2b^4\sqrt{3}$

Answers to sample questions: 1-C; 2-C; 3-A; 4-C; 5-A.

CREDIT RECOMMENDATIONS

The Center for Adult Learning and Educational Credentials of the American Council on Education (ACE) has reviewed and evaluated the DSST test development process and has made the following recommendations:

| | |
|---------------------------|--|
| Area or Course Equivalent | Fundamentals of College Algebra |
| Level | Lower level baccalaureate |
| Amount of Credit | Three (3) semester hours |
| Source | ACE Commission on Education Credit and Credentials |

It is advisable that schools develop a consistent policy about awarding credit based on scores from this test and that the policy be reviewed periodically. Prometric will be happy to help schools in this effort.

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