

DANTES

Subject Standardized Tests

Fact Sheet

Study Guide

FUNDAMENTALS OF COLLEGE ALGEBRA

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 passing score for each examination is determined by the school based on recommendations from the American Council on Education (ACE). This minimum credit-awarding score is equal to the mean score of students in the norming sample who received a grade of C in the course. 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 where they expect to receive credit.

The use of non-programmable calculators is permitted during the test. Scratch paper for computations should be provided.

CONTENT

The following topics, which are commonly taught in courses on this subject, are covered by this examination.

	<u>Approximate Percent</u>		<u>Approximate Percent</u>
I. Fundamental Algebraic Operations	11%	A. Combining and simplifying expressions with positive, negative, and fractional exponents	
A. Simplifying and evaluating polynomials		B. Combining and simplifying expressions with logarithms	
B. Simplifying and evaluating algebraic expressions		IV. Linear Equations and Inequalities	16%
II. Factoring Polynomials	7%	A. Single variables	
III. Radicals, Exponents, and Logarithms	9%	B. Systems	
		V. Absolute Value Equations and Inequalities	6%
		VI. Quadratic Equations and Inequalities	9%
		A. Completing the square	
		B. Quadratic formula	
		VII. Graphing	17%
		A. One dimensional (absolute value, inequalities)	
		B. Two dimensional (linear, systems of equations, horizontal/vertical, parallel/perpendicular, circles, parabolas, step functions)	
		VIII. Equations Involving Radicals	16%
		IX. Complex Numbers	3%
		A. Basic operations	
		B. Conjugate	
		X. Rational Expressions	9%
		XI. Functions	7%
		A. Domain and range	
		B. Coordinate system	
		C. Inverse Functions	
		D. Composite functions	

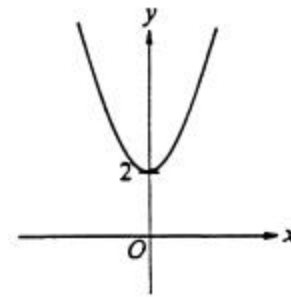


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Questions on the test require candidates to demonstrate the following abilities. Some questions may require more than one of the abilities.

- Knowledge of basic facts and terms (about 10% of the examination)
- Apply information to specific problems (about 70% of the examination)
- Analyze and evaluate data or information (about 20% of the examination)



SAMPLE QUESTIONS

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

- (A) $4ab^2\sqrt{3a}$
 (B) $8ab^2\sqrt{3a}$
 (C) $24ab^2\sqrt{a}$
 (D) $16a^2b^4\sqrt{3}$

3. 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) $x = y^2 + 2$

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

5. 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

STUDYING FOR THE EXAMINATION

The following is a list of reference publications that were being used as textbooks in college courses of the same or similar title at the time the test was developed. Appropriate textbooks for study are not limited to those listed below. If you wish to obtain study resources to prepare for the examination, you may reference either the current edition of the following titles **or** textbooks currently used at a local college or university for the same class title. It is recommended that you reference **more than one textbook** on the topics outlined in this fact sheet. You should **begin by checking textbook content against the content outline** included on the front page of this Fact Sheet/Study Guide **before** selecting textbooks that cover the test content from which to study. Textbooks may be found at the campus bookstore of a local college or university offering a course on the subject.

Aufmann, Richard N., and Richard D. Nation. *College Algebra and Trigonometry*. Boston, MA: Houghton Mifflin, current edition.

Hirsch, Lewis, and Arthur Goodman. *College Algebra and Trigonometry*. Englewood Cliffs, NJ: Prentice Hall, current edition.

Larson, Roland E., Robert P. Hostetler, Carolyn F. Neptune, and assistance of David E. Heyd. *Intermediate Algebra Graphs and Functions*. Instructor's Annotated ed. Lexington, MA: D.C. Heath and Company, current edition.

Lial, Margaret L., E. John Hornsby, Jr., and Charles D. Miller. *Intermediate Algebra With Early Functions and Graphing*. New York, NY: HarperCollins College Publishers, current edition.

Martin-Gay, K. Elayn, *Beginning Algebra*. Annotated Instructor's ed. Englewood Cliffs, NJ: Prentice Hall, current edition.

Research and Education Associates. *The Algebra and Trigonometry Problem Solver, A Complete Solution Guide to Any Textbook*. Piscataway, NJ, current edition.

Spiegel, Murray R., Ph.D. *Schaum's Outline of Theory and Problems of College Algebra*. New York, NY: Schaum Publishing Co., current edition.

Current textbook used by a local college or university for a course on the subject.

CREDIT RECOMMENDATIONS

The Center for Adult Learning and Educational Credentials of the American Council on Education has reviewed and evaluated the DAN TES examination development process. The American Council on Education has made the following recommendations:

Area or Course	
Equivalent:	Fundamentals of College Algebra
Level:	Baccalaureate
Amount of Credit:	Three (3) semester hours
Source:	ACE Commission on Educational Credit and Credentials

INFORMATION

Colleges and universities that would like to review copies of tests, have additional information about the national norming, or assistance in local norming or score validation studies should write to: DAN TES Program, Mail Stop 11-P, The Chauncey Group International, 664 Rosedale Road, Princeton, New Jersey 08540.

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. The Chauncey Group will be happy to help schools in this effort.

