

# DSST® FUNDAMENTALS OF COLLEGE ALGEBRA

## EXAM INFORMATION

This exam was developed to enable schools to award credit to students for knowledge equivalent to that learned by students taking the course. This exam tests the ability to solve quadratic inequalities, operations of functions, rational functions, and exponential and logarithmic functions.

The exam contains 100 questions to be answered in 2 hours.

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.

## EXAM 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.

### I. Fundamental Algebraic Operations – 4%

- Operations with algebraic expressions
- Operations with polynomials

### II. Factoring Polynomials over Real Numbers – 6%

### III. Rational Expressions – 7%

### IV. Exponential and Radical Expressions – 8%

Operations with positive, negative, and fractional exponents.

### V. Linear Equations – 12%

- Single variables
- Operations with matrices
- Methods of solving two and three variable systems

### VI. Absolute Value Equations and Inequalities – 6%

### VII. Quadratic Equations and Inequalities – 12%

- Methods of solving
- Quadratic forms
- Solving quadratic inequalities

### VIII. Equations Involving Radicals – 6%

### IX. Complex Numbers – 5%

- Conjugate
- Basic operations

### X. Functions – 20%

- Domain and range
- Coordinate systems
- Inverse functions
- Operations and functions
- Rational functions
- Exponential and logarithmic functions

### XI. Two Dimensional Graphing – 14%

## REFERENCES

Below is a list of reference publications that were either used as a reference to create the exam, or were used as textbooks in college courses of the same or similar title at the time the test was developed. You may reference either the current edition of these 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** provided **before** selecting textbooks that cover the test content from which to study.

Sources for study material are suggested but not limited to the following:

- Shipman, Jerry R. (2007). *Algebra and Trigonometry Problem Solver*. West Piscataway, NJ: Research and Education Association, current edition.
- Lial, Margaret, Hornsby, John, & McGinnis, Terry (2006). *Intermediate Algebra*. Boston, MA: Addison-Wesley, 8<sup>th</sup> Ed.

## SAMPLE QUESTIONS

All test questions are in a multiple-choice format, with one correct answer and three incorrect options. These are samples of the types of questions that may appear on the exam. Other sample questions can be found in the form of practice exams by visiting our website at [www.getcollegedcredit.com/testprep](http://www.getcollegedcredit.com/testprep).

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

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

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

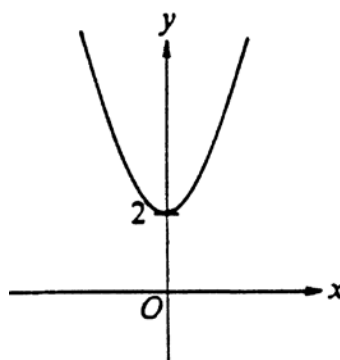
4.  $\sqrt{48a^3b^4} =$

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

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

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

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



5. 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.  $x = y^2 + 2$

### CREDIT RECOMMENDATIONS

The American Council on Education's College Credit Recommendation Service (ACE CREDIT) has evaluated the DSST test development process and content of this exam. It has made the following recommendations:

<b>Area or Course Equivalent</b>	Fundamentals of College Algebra
<b>Level</b>	Lower-level baccalaureate
<b>Amount of Credit</b>	Three (3) semester hours
<b>Minimum Score</b>	400
<b>Source</b>	American Council on Education – College Credit Recommendation Service

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

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