The New York State High School Equivalency Test

Examinee Guide to the Test Assessing
Secondary Completion™
TASC Test Math Subtest

The TASC Math Subtest is one of the five subject area tests (Reading, Writing, Mathematics, Science and Social Studies) required for the High School Equivalency (HSE) Diploma. The test measures national educational standards, and is available in paper-based or computer-based formats. This guide provides an overview of the TASC Math Subtest.

Highlighted terms in this brochure can be used for internet searches to find free study materials. The test is in two parts. Part I allows use of a calculator, Part II does not. You have 90 minutes to answer around 55 questions; most are multiple-choice, with a few gridded-response items.

When you take the test, you may find some difficult questions, but do not get discouraged. Do your best to answer all of the questions.

What to Know
This guide shows some broad topic areas and provides examples of math that may be on this test. It does not include every type of problem. Below, find several math formulas, concepts and terms to know and understand.

Formulas, Concepts, and Terms

Formulas
Finding Distance, Rate, or Time (d = rt)
Simple Interest Problems (I = prt)
Pythagorean Theorem (a^2 + b^2 = c^2)

Area Formulas:
Area of a rectangle (A = lw)
Area of a triangle (A = \frac{1}{2}bh)
Area of a circle (A = \pi r^2)
Volume of a rectangular prism or box (V = lwh)

Concepts
• Rounding numbers to a specific place value
• Finding the slope of a line
• Plot points on a graph
• Function notation
• Understanding the relationship of lengths, areas, and volume
• Rational versus irrational numbers
• Evaluate functions for a given value

Terms
average rate of change
cone
congruent coordinates cylinder density difference dilations domain of a function horizontal integers maximum mean (average) median minimum origin coefficient parallel perpendicular Pi (\pi, approximately 3.14) product pyramid quotient range of a function reflections relative frequency right angle rotations sampling bias spheres sum survey symmetry transformations translations vertex vertical vertices

Calculator and Math Reference Sheets
A TI-30XS calculator will be provided for the test. You may not use your own calculator. The calculator has many scientific functions. One way to become familiar with the calculator before taking the TASC test is to visit www.tasctest.com to see both the Calculator and Math Reference Sheets.

Passing Scores for the TASC Math Subtest
The passing score is 500 for each TASC subtest—plus a minimum score of 2 on the Writing Subtest essay. You pass the TASC test when you pass each of the five subtests.

About the Examples:
The TASC Math Subtest measures high school-level math skills. Many of the questions require using multiple steps and skills, and applying the information to real-world situations. The examples in this brochure show skills used to answer TASC Math Subtest questions.

How Can I Prepare?
• Review and practice your mathematics skills
• Search the internet for lessons on mathematical terms or concepts found here. Terms highlighted in green can be used for internet searches.
• Find free learning material on the internet. If a lesson seems too challenging or confusing, try a different website, or you may want to study a different topic first.
• Read the TASC test sample items available at www.tasctest.com
• Get test-taking tips from the TASC test website: www.tasctest.com
• Use the TASC test blog at: www.tasctest.com
• Find a free High School Equivalency Preparation Program at: http://www.acces.nysed.gov/hse/hse-prep-programs-maps
• Find a TASC Test Center at: http://www.acces.nysed.gov/hse/hse-testing-maps
• Get to know the calculator: https://education.it.com/en/products

New York State Education Department
PO Box 7348 • Albany, New York 12234
Tel: (518) 474-5906
www.acces.nysed.gov/hse/
www.tasctest.com
Email: HSE@nysed.gov

The State Education Department does not discriminate on the basis of age, color, religion, creed, disability, marital status, veteran status, national origin, race, gender, genetic predisposition or carrier status, or sexual orientation in its educational programs, services and activities. Portions of this publication can be made available in a variety of formats, including braille, large print or audio tape, upon request. Inquiries concerning this policy of nondiscrimination should be directed to the Department’s Office for Diversity, Ethics, and Access, Room 530, Education Building, Albany, NY 12234.

Developed and published by Data Recognition Corporation, 13400 Baseline Road, Maple Grove, MN 55311. Copyright © 2016 by Data Recognition Corporation. All rights reserved. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher. TASC Test Assessing Secondary Completion is a trademark of Data Recognition Corporation. Data Recognition Corporation is not affiliated with The After-School Corporation, which is known as TASC. The After-School Corporation has no affiliation with the Test Assessing Secondary Completion (TASC test)” offered by Data Recognition Corporation, and has not authorized, sponsored or otherwise approved of any of Data Recognition Corporation’s products and services, including TASC test.

New York State Education Department test assessing secondary completion™
Algebra (26%)
Evaluate an algebraic expression for given values:
Evaluate $2x^2y$ when $x = -2$ and $y = -3$.
$2(-2)^2(-3) = 2(-8)(-9) = 144$

Apply the rules of exponents:
$(x^a)(x^b) = x^{a+b}$
$(x^a)^b = x^{ab}$
Solving formulas for a specific variable:
$-4(3x - 2) = 2x - 20$
Solve for $x$: $8x + 4y = -3$

Add, subtract, multiply, and divide negatives:
$-3 + 45 = 42$
$-8 - 2 = -4$
$-8 - 5 = -13$
$(-4)(-2.1) = 8.4$

Evaluate an expression using the order of operations:
(Parenthesis, Exponents, Multiply and Divide, Add and Subtract, or simply, PEMDAS)
$12 - (2)(4) + (1 - 6) = 12 - (2)(4) + (-5) = 12 - 8 - 5 = -1$

Simplify polynomials by combining like terms:
$3x^2y + 4xy^2 - 8x^2y - 4xy^2 + 2x - 3y^2$

Multiply $n$nd degree monomials:
$6x^3y^2 = 3x^2y^x$

Multiply binomials: $(x+5)(x-8) = x^2 - 3x - 40$

Factor trinomials: $x^2 - 3x - 28 = (x-4)(x-7)$

Evaluate functions for a given value:
Evaluate $f(x)$, given $f(x) = 3x - 8$.
$f(3) = 3(3) - 8 = 15 - 8 = 7$

Geometry (23%)
Find volume: Find the number of cubic meters in a room that is 12 meters (m) by 10 by 3 m high.
$V = \text{length} \times \text{width} \times \text{height}$

Use volume formulas for pyramid, cylinder, cone, and a sphere. (These formulas are provided on the Mathematics Reference Sheet.)

How many cubic inches will a cylinderical can hold if it is 4 inches tall and has a diameter of 3 inches? The can is a cylinder.

Pythagorean Theorem: Memorize $a^2 + b^2 = c^2$.

Statistics and Probability (12%)
Probabilities: as fractions, decimals, and percentages:
What is the probability of winning a lottery drawing with 200 tickets if you buy 5 tickets?

Graph basic functions: Graph $f(x) = 2x + 3$.

Tip: Functions are graphed like equations on an $x$-$y$ grid. Use the function value, $f(x)$, like $y$.

Average Rate of Change: The same as the slope of the graph.