

Thinkwell's Homeschool Math Series Placement Guide

Welcome! Thank you for your interest in Thinkwell. We know the curriculum selection process for your homeschool student can be challenging. We here at Thinkwell want to help you make this decision as straightforward and painless as possible. This Guide and the Placement Tests were created to provide you with a tool to place your student in the appropriate level of math.

Thinkwell offers five courses in the Homeschool Math series.

- Thinkwell's Homeschool Prealgebra
- Thinkwell's Homeschool Intermediate Algebra (Algebra 1)
- Thinkwell's Homeschool Geometry coming soon!*
- Thinkwell's Homeschool College Algebra (Algebra 2)
- Thinkwell's Homeschool Precalculus
- Thinkwell's Homeschool Calculus

Typical Sequence of Secondary Math Courses

A typical sequence of secondary math courses completed by a college-bound student is listed below for your use in determining the most appropriate Thinkwell Homeschool course to take. Most college-bound students will take five or six years of math between 7th and 12th grades, beginning with Prealgebra and ending with Precalculus or Calculus.

- Prealgebra
- Algebra 1
- Geometry
- Algebra 2
- Precalculus
- Calculus

Guide to the Placement Tests

If you are not sure which Thinkwell Homeschool math course is best for your student, completing one or more of the Placement Tests will give you a better idea. Each Placement Test contains 10 questions. There is no time limit for the Placement Tests, but generally a test should take about an hour. Your student should take the test independently and a calculator should not be used.

After completing a Placement Test, you can use the **Guidelines for Interpreting Placement Test Scores** below to determine which course is recommended by Thinkwell. The Placement Test score and corresponding course recommendation should not be the only determining factor when deciding the appropriate course for your student. Your student's grade level and experience in previously completed math courses should also be considered. Please feel free to contact a Thinkwell representative at support@thinkwell.com or 1.800.684.0058 if you have any questions regarding appropriate placement.

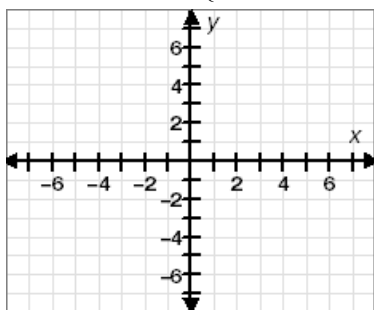
Guidelines for Interpreting Placement Test Scores

| Placement Test | Number of Correct Answers | Recommendation |
|------------------|---------------------------|--|
| Placement Test 1 | 5 or more | Thinkwell's Prealgebra |
| Placement Test 2 | 6 or less | Thinkwell's Prealgebra |
| | 7 or more | Thinkwell's Intermediate Algebra (Algebra 1) |
| Placement Test 3 | 4 or less | <i>complete Placement Test 2</i> |
| | 5 or 6 | Thinkwell's Intermediate Algebra (Algebra 1) |
| | 7 or more | Thinkwell's College Algebra (Algebra 2) |
| Placement Test 4 | 4 or less | <i>complete Placement Test 3</i> |
| | 5 or 6 | Thinkwell's College Algebra (Algebra 2) |
| | 7 or more | Thinkwell's Precalculus |
| Placement Test 5 | 4 or less | <i>complete Placement Test 4</i> |
| | 5 or 6 | Thinkwell's Precalculus |
| | 7 or more | Thinkwell's Calculus |

Thinkwell's Placement Test 5

Thinkwell's Placement Test 5 is a 10-question test. Complete each question independently and show all work. Do not use a calculator. The test is not timed, but you should finish in less than 1.5 hours. Use the answer key to score your test after you finish all of the test questions. A recommendation can be made regarding your readiness for Thinkwell's Calculus based on your score on this test.

1. Graph. $f(x) = \begin{cases} \sqrt{x} - 3, & x \geq 0 \\ x + 1, & x < 0 \end{cases}$



2. Find all of the zeros of $P(x) = x^4 - 4x^3 - x^2 - 16x - 20$ given that $2i$ is a zero.

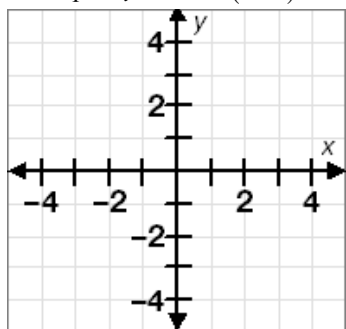
3. Write the partial fraction decomposition.

$$\frac{9x^2 + 7x - 3}{x^3 + 2x^2}$$

4. Simplify the expression without using a calculator.

$$\sin^2\left(\frac{\pi}{6}\right) + \cos^2\left(\frac{\pi}{4}\right) + \tan^2\left(\frac{\pi}{3}\right)$$

5. Graph. $y = 2 \sin \pi(x - 1) + 2$



6. Simplify. $\frac{2}{\sin \theta + 1} - \frac{2}{\sin \theta - 1}$

7. Find all solutions in the interval $[0, 2\pi)$.

$$\sin^2 \theta = \frac{1}{2} \sin \theta$$

8. In an electric circuit, the electromotive force is $E(t)$ volts where $E(t) = 2\cos 50\pi t$. Find the smallest positive value of t for which the electromotive force is 2 volts.

9. Find all solutions in the interval $[0, 2\pi)$.

$$\cos 2t = \cos t$$

10. $\beta = 38^\circ$, $a = 7.25$ in., and b is 1.3 in. longer than a . Find c .

