

## 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 8 courses in the Homeschool Math series.

- Thinkwell's Homeschool 6<sup>th</sup> Grade Math
- Thinkwell's Homeschool 7<sup>th</sup> Grade Math
- Thinkwell's Homeschool 8<sup>th</sup> Grade Math
- Thinkwell's Homeschool Algebra 1
- Thinkwell's Homeschool Geometry
- Thinkwell's Homeschool 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 seven or eight years of math between 6<sup>th</sup> and 12<sup>th</sup> grades, beginning with 6<sup>th</sup> Grade Math and ending with Precalculus or Calculus.

- 6<sup>th</sup> Grade Math
- 7<sup>th</sup> Grade Math
- 8<sup>th</sup> Grade Math
- 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.

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](mailto: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 | 7 or more                 | <a href="#">Thinkwell's 6<sup>th</sup> Grade Math</a>         |
| Placement Test 2 | 6 or less                 | <a href="#">Thinkwell's 6<sup>th</sup> Grade Math</a>         |
|                  | 7 or more                 | <a href="#">Thinkwell's 7<sup>th</sup> Grade Math</a>         |
| Placement Test 3 | 4 or less                 | <i>complete Placement Test 2</i>                              |
|                  | 5 or 6                    | <a href="#">Thinkwell's 7<sup>th</sup> Grade Math</a>         |
|                  | 7 or more                 | <a href="#">Thinkwell's 8<sup>th</sup> Grade Math</a>         |
| Placement Test 4 | 4 or less                 | <i>complete Placement Test 3</i>                              |
|                  | 5 or 6                    | <a href="#">Thinkwell's 8<sup>th</sup> Grade Math</a>         |
|                  | 7 or more                 | <a href="#">Thinkwell's Algebra 1</a>                         |
| Placement Test 5 | 4 or less                 | <i>complete Placement Test 4</i>                              |
|                  | 5 or 6                    | <a href="#">Thinkwell's Algebra 1</a>                         |
|                  | 7 or more                 | <a href="#">Thinkwell's Algebra 2 or Thinkwell's Geometry</a> |
| Placement Test 6 | 4 or less                 | <i>complete Placement Test 5</i>                              |
|                  | 5 or 6                    | <a href="#">Thinkwell's Algebra 2 or Thinkwell's Geometry</a> |
|                  | 7 or more                 | <a href="#">Thinkwell's Precalculus</a>                       |
| Placement Test 7 | 4 or less                 | <i>complete Placement Test 6</i>                              |
|                  | 5 or 6                    | <a href="#">Thinkwell's Precalculus</a>                       |
|                  | 7 or more                 | <a href="#">Thinkwell's Calculus</a>                          |

### Thinkwell's Placement Test 6

Thinkwell's Placement Test 6 is a 10-question test. Complete each question independently and show all work. 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 Precalculus based on your score on this test.

1. Evaluate  $f(-2)$  for the given function.

$$f(x) = \begin{cases} -2x & \text{if } x < -2 \\ 5x + 7 & \text{if } -2 \leq x \leq 4 \\ -7x & \text{if } x > 4 \end{cases}$$

2. Find the vertex and the axis of symmetry for the parabola with the given equation.

$$y = 5x^2 - 30x + 47$$

3. Solve.  $2x^2 - 3x = -4$

4. Solve.  $\sqrt{6y} = 3\sqrt{2y-4}$

5. Find the product.  $(x - 2)(x^2 - 4x + 1 + x)$

6. Subtract.  $\frac{5}{x+1} - \frac{6}{x^2-1}$

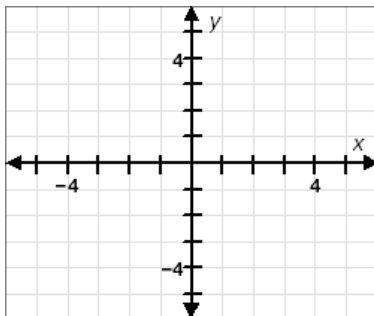
Assume that all variables result in nonzero denominators.

7. Divide.  $\frac{6x^3 - 3x^2 - 2x + 3}{-3x^2 + 1}$

8. Given that one zero is  $x = -4$  and another is  $x = 3$ , find the zeros and their multiplicities for the function.

$$f(x) = x^4 + 9x^3 + 12x^2 - 80x - 192$$

9. Graph.  $f(x) = -(x+2)^2(x-1)^2$



10. Solve for  $x$ .  $\sqrt{4x-3} = x-6$