2017-2018 WCSD Precalculus with Trigonometry Program Evaluation Rubric

Evaluator Number

17

Program Number

6

Name of Text

Precalculus with Limits: A Graphing Approach

Publisher

Cengage Learning

Rate This Text Overall

- [x] High
- [ ] Mid
- [ ] Low

Focus: Evaluate the table of contents and any pacing guides. Do not stop there; also evaluate units, chapters, and lessons. (Both student and teacher materials)

- Functions
- Polynomial Functions
- Rational Functions
- Exponential Functions
- Logarithms Functions
- Trigonometric Functions
- Analytic Trigonometry
- Systems
- Conic Sections
- Sequences and Series
- Limits and Continuity

At least 90% of the topics are in the textbook.
Comments?

- ○ Less than 25%
- ○ Less than 60% but greater than 25%
- ○ Less than 90% but greater than 60%
- ● At least 90%

Is the text readable for students? Does it support good math language acquisition?
Comments?

Formula page at beginning and Technology Appendix at end are useful. Chapter summary is easy to use and useful with a quick reminder about a concept and a page number for where to find it in the section.
Examples often employ a 2 column layout.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs

Student work involves significant work with applications/modeling and problems that use algebra skills.
Comments?

There are a variety of types of application problems. They generally require a reasonable amount of background knowledge. There are fairly rigorous algebra problems.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs

There are problems at a level of sophistication appropriate to Pre-Calculus with Trigonometry (beyond mere review of Algebra 2 course topics) that involve the application of knowledge and skills.
Comments?

The level does seem appropriate for a high school class. The fact that the book includes multiple representations I think makes it easier to differentiate for struggling and above average students. The book does include some mathematical proofs of important theorems used in a short section after the regular sections.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs

Rigor: Examine the instructional materials, student practice and assessments. Look for evidence of where the topics explicitly require students to understand concepts, do the assignments that students work on build that understanding, and do assessment tasks reveal whether students understand the mathematics in question?
Comments?

This book does a better job than some others of requiring students to explain or justify their thinking. The chapter summaries look helpful for students and the practice test problems seem reasonable and allow students to assess their own knowledge.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs

Rigor: Do the materials feature high-quality conceptual problems and conceptual discussion questions? Do they provide opportunities for multiple representations?

Comments?

Book does good job here. Many questions ask students to explain or justify. There are leading questions that require a student to make a conclusion. For example in inverse section book asks students to prove that functions are inverses of each other algebraically, graphically, and numerically.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs

Rigor: Are the materials designed so that students attain the fluency and procedural skills required? Evaluate the lessons, chapter/unit assessments, daily routines, and homework assignments for evidence in the development of fluency and procedural skill supported by conceptual understanding.

Comments?

Book plays well with technology, encouraging students to use it, but also understand its limits. There do seem to be sufficient practice problems and the online materials have helpful hints.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs

Rigor: Are the materials designed so that teachers and students spend sufficient time working with applications, without losing focus on the topics defined for the course? Are there single- and multi-step contextual problems that develop the mathematics of the course, afford opportunities for practice, and engage students in problem solving?

Comments?

There are adequate opportunities for problem solving, including modeling.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs

Coherence: Are the materials coherent in their content, do the topics build on each other in a way that is beneficial to the instruction, student practice and assessments?

Comments?

The book is laid out in a coherent manner.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs