

Math 12 Pre-Calculus LG 16

RATIONAL FUNCTIONS



INTRODUCTION:

Lots of real world situations can be modeled using functions and equations. Check out pages 426 – 427 and 428 – 429.



LEARNING GUIDE EXPECTATIONS:

On the completion of this learning guide you will be able to:

- 1) Graph, analyze and compare rational functions using transformations and technology.
- 2) Determine whether graphs have an asymptote or a point of discontinuity for a non-permissible value.
- 3) Solve rational equations.



EVALUATION:

Write the LG 16 assessment quiz.



RESOURCES NEEDED:



Math 12 Pre-Calc Text



Math 12 Pre-Calc Learning Guides.



sd42onlinemath.yolasite.com

LEARNING ACTIVITIES:



Expectation #1: Graph, analyze and compare rational functions using transformations and technology.



1. [Watch and take notes on instructional video on Graphing Rational Functions.](#)



2. In the textbook, read Link the Ideas on page 432.
3. Work through Example 1 on pages 432 - 433 and complete the “Your Turn” question.
4. Read the information at the top of page 434.

5. Work through Examples 2-5 on pages 434 – 441 and complete the corresponding Your Turn questions.



6. Read Key Ideas on page 441. In your math journal, define a rational function. Describe how to find the non-permissible values, the end behaviour and the behaviour near the non-permissible values, and the equations of the vertical and horizontal asymptotes.



7. In the textbook, complete pages 442 - 445 #1 – 4, 6 – 9, 13 – 15.



Expectation #2: Determine whether graphs have an asymptote or a point of discontinuity for a non-permissible value.



1. [Watch and take notes on instructional video on Analyzing Rational Functions.](#)



2. Complete Investigate Analyzing Rational Functions on page 446.

3. Read Link the Ideas on page 447.

4. Work through Examples 1 – 3 on pages 447 - 450 and complete the corresponding Your Turn questions.



5. Read Key Ideas on page 451. In your journal, describe how to find the x-intercepts, points of discontinuity and vertical asymptote of a rational function. Include an example to illustrate.



6. In the textbook, complete pages 451 - 456 #1 -13.



Expectation #3: Solve rational equations.



1. [Watch and take notes on instructional video on Solving Rational Equations.](#)



2. Read Link the Ideas on page 458.

3. Work through Examples 1-4 on pages 459 - 464 and complete the corresponding Your Turn questions.



4. Read Key Ideas on page 465. In your journal, describe how to solve a rational equation algebraically and graphically. Use an example of each to illustrate.



5. In the textbook, complete pages 465 – 467 #1 – 9, 11, 13.

REVIEW AND CHALLENGE



1. In the textbook, complete Chapter 9 Review pages 468 - 469 #1 – 11.

2. Complete Chapter 9 Practice Test pages 470 – 471 #1 – 16.

Key Terms: rational function, point of discontinuity, asymptote.

PRACTICE QUIZZES

[Practice quiz #1](#)

[Practice quiz #2](#)

[Practice quiz #3](#)

[Practice quiz #4](#)