Math 12 Pre-Calculus LG 13

EXPONENTIAL FUNCTIONS AND EQUATIONS

INTRODUCTION:

Did you ever wonder how glow-in-the-dark watches work? Check out pages 332-333.

LEARNING GUIDE EXPECTATIONS:

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

1) Analyze graphs of exponential functions.
2) Apply transformations to exponential functions.
3) Solve exponential equations by getting the bases the same and by using graphing technology.

EVALUATION:

Write the LG 13 assessment quiz. **NOTE: GRAPHING CALCULATORS ARE NOT PERMITTED ON THIS TEST.**

RESOURCES NEEDED:

Math 12 Pre-Calc Text

Math 12 Pre-Calc Learning Guides.

sd42onlinemath.yolasite.com

LEARNING ACTIVITIES:

Expectation #1: Analyze graphs of exponential functions.

1. Watch and take notes on instructional video on Graphing Exponential Functions.
2. In the textbook, read the top of page 334 (it is kind of interesting).
3. Complete Investigate Characteristics of Exponential Functions on page 334-335.
4. Read Link the Ideas on page 335.
5. Work through Examples 1-3 on pages 336-341 and complete the corresponding "Your Turn" questions.


6. Read Key Ideas on page 342. In your math journal, include this information on the properties of an exponential function. Be sure to include the sketches of the graphs.


7. In the textbook, complete pages 342 – 345 #1 – 9, 11.


Expectation #2: Apply transformations to exponential functions.


1. Watch and take notes on instructional video on Transformations of Exponential Functions.


2. You have learned transformations in LG 1&2. You will now apply these to the exponential function you have learned in Expectation 1 of this guide. Complete Investigate Transforming an Exponential Function on pages 346-347.

3. Read Link the Ideas on pages 348-349.

4. Work through Examples 1 & 2 on pages 349-353 and complete the corresponding Your Turn questions.


5. Read Key Ideas on page 354. In your journal, describe how to use transformations to graph an exponential function. Include an example to illustrate.


6. In the textbook, complete pages 354 - 355 #1-4, 5c,d, 6iii,iv, 10.


Expectation #3: Solve exponential equations by getting the bases the same and by using graphing technology.


1. Watch and take notes on instructional video on Solving Exponential Equations by Getting the Bases the Same.


2. Watch and take notes on instructional video on Solving Exponential Equations by Using Graphing Technology.


3. Read Link the Ideas on page 359. Work through Examples 1-3 on pages 360-363 and complete the corresponding Your Turn questions.


4. Read Key Ideas on page 363. In your journal, describe, using an example, how to solve exponential equations by getting the bases the same.


5. In the textbook, complete pages 364-365 #1-5, 7, 8, 11, 14.

REVIEW AND CHALLENGE

1. In the textbook, complete Chapter 7 Review pages 366-367 #1 – 4, 5c,d, 6-10, 11 (with graphing technology), 12.
2. Complete Chapter 7 Practice Test pages 368-369 #1 – 14.

Key Terms: exponential function, exponential growth, exponential decay, half-life, exponential equation.

PRACTICE QUIZZES

Practice quiz #1
Practice quiz #2
Practice quiz #3
Practice quiz #4

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