Course Title: Algebra 2 Part 1

Unit 2 Application Problems

Directions

At the end of each module you will have application problems that will help you apply the skills taught throughout the module. You will only submit your work to these application problems in module 10.

Be sure to save this document where you know how and where to find it. This template is a place for you to show your work and present your solutions. Make sure your work is clear and you show all of your steps that you took to solve the application problem.

You CAN do your work on paper, take an image of your work, and paste that image onto this template.

Module 6 Application Problem #1

This application problem is just to get you started. Be sure to follow the tutorial video part 1 for instructions on how to do this.

After you have watched unit 2 project tutorial video #1 type yes into the text box: Yes

After you have watched unit 2 project tutorial video #2 type yes into the text box: Yes

Module 6 Application Problem #2

To get your stained glass window started, you will want to have two quadratic functions as part of your design.

Quadratic Equation 1: x^2+2x+3

Domain: -infinity < x < infi Range: 2 < x < infinity

Quadratic Equation 2: x^2 + 4x + 9

Domain: -infinity < x < infi Range: 5 < x < infinity

Desmos Link: https://www.desmos.com/calculator/8b2hnd8cm8

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Module 7 Application Problem #3

To complete this step, you will want to add a cubic function to your stained glass window. Remember that you can limit your domain to only use a portion of your graph.

Cubic Function:

Domain:

Range:

Module 7 Application Problem #4

To complete this step, you will want to add a polynomial function to your stained glass window. You must have the highest power of your function be larger than 3.

Polynomial Function:

Domain:

Range:

Paste image of graph here:

Desmos Link:

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Module 8 Application Problem #5 & #6

To complete these steps you will want to add 2 rational equations to your stained glass window. Remember that you can limit your domain to only use a portion of your graph.

Rational Function 1:

Domain:

Range:

Rational Function 2:

Domain:

Range:

Paste image of graph here:

Desmos Link:

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Module 9 Application Problem #7 & #8

To complete these steps you will want to add 2 absolute value functions to your stained glass window. Remember that you can limit your domain to only use a portion of your graph.

Absolute Value Function 1:

Domain: Range:

Absolute Value Function 2:

Domain: Range:

Paste image of final graph here:

Desmos Link:

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Application Problem Reflection

Idea Design and Refinement

Share how you met the following criteria as you worked to complete these application problems.

1. The student asks thoughtful questions which identify constraints, key benefits, desired functions, and essential features of the desired system. They clearly define the system and how the different parts of the system should interact.
2. The student searches for new ideas and different ways to meet the requirements. They seek many different viewpoints and interpretations to clarify their assumptions. They creatively design an innovative product or model of the system.
3. The student seeks for feedback about the design. They search for changes that will improve the system. They effectively manage their time to get the work completed.
4. The student continuously and effectively refines their ideas and tests assumptions. They actively integrate feedback to improve the design. The end product or model exceeds the system requirements.

In the space provided below be sure to reflect on each of the 4 criteria listed. Additional slides can be used for additional space.

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Application Problem Reflection

Idea Design and Refinement Cont.

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Submission Instructions:

To complete this submission you will want to attach the following 3 items:

- an image of your stained glass window exported as a PNG from Desmos. (You may submit the completed template provided for this project, including the image from Desmos.)
- A comment with a URL of your graph to share your equations with your teacher
- the completed template including your reflection on the skills criteria.

Please be sure to submit ALL 3 items before submitting them for a final grade.