This Project is worth a quiz grade. The “Pie Project” will be assessing your knowledge of Piecewise and Step Functions. There are 4 parts to this project:

Part 1: Write the system of 5 functions and their domain.

Part 2: Complete the graph to show the tax imposed on each pie.

Part 3: Using the graph answer the open ended questions about the pies.

Part 4: Complete your mini poster (Requirements will be given).

**PART 1:**

You are selling different kinds of pie. The taxable amounts and tax imposed up to $1 are shown below.

* For amounts from $0.01 and $0.20, the tax is $0.01.
* For amounts greater than $0.20 and less than or equal to $0.40, the tax is $0.02
* For amounts greater than $0.40 and less than or equal to $0.60, the tax is $0.03
* For amounts greater than $0.60 and less than or equal to $0.80, the tax is $0.04
* For amounts greater than $0.80, the tax is $0.05

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**PART 2:**

Use the Piecewise Function above to graph:

**A Pie Tax Table**

0 .20 .40 .60 .80 1.00

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.05

.04

.03

.02

.01

Amount of Tax

Taxable Amount

**PART 3:**

Use the graph to answer the following questions:

1. An apple pie costs $0.55. What is the total cost with tax?
2. Your aunt purchased four pumpkin pies at $0.55 a piece to send with you to school for Pi Day. What is the total cost with tax if you tax each pie individually and if you tax the entire order?
3. Someone purchased four key lime pies at $0.55 a piece. They gave you $2 and a quarter. Is this enough money to cover the cost of the pies and the tax? Explain your answer and if you taxed each pie or the entire order.
4. You purchased 3 pies for $0.45 a piece for Pi Day. What is the difference in taxing individually and taxing as an entire order? Which would you rather have? Which would the store rather have? Explain why for both.

**PART 4: POSTER REQUIREMENTS**

* Title
* Names, period
* Bullet points from part 1
* System from part 1
* Graph from part 2
* Questions and answers from part 3
* Picture or drawing of your favorite pie!