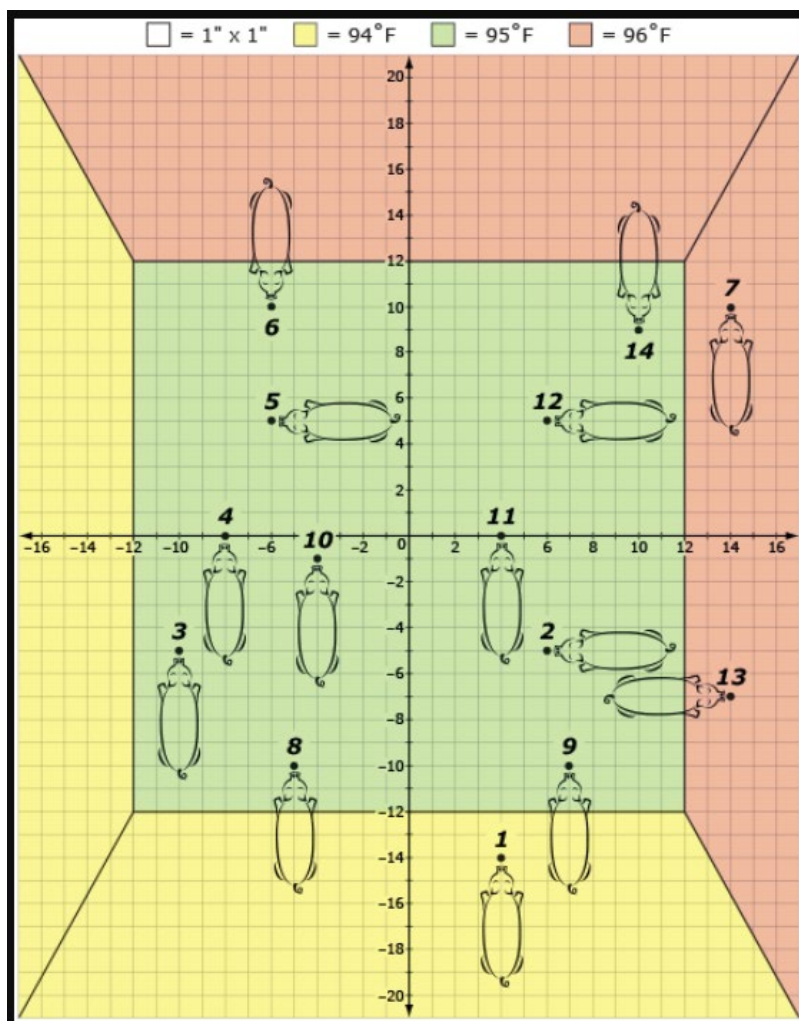


Name:

This Little Piggy is Warm Final Report

As the world population increases, so does the need for food. The average American family of four consumes 240 pounds of pork per year. Pork consumption is steady in the United States but rising fast in China. Developing countries around the world are increasing their pork consumption. A new heating system that could reduce early piglet loss would greatly benefit world food production.

The purpose of your final report is to convince the United States Department of Agriculture (USDA) to approve the use of the new heated mat. First, you will respond to series of questions to demonstrate your understanding of the mathematical concepts used in the study. Then, you will write a paragraph explaining the reasons why the mat should be used.



Question 1

Give the coordinates of two piglet noses with the same y -values and opposite x -values. Explain how to find the distance between coordinates with the same y -values and opposite x -values.

Question 2

Use the *Piglet Temperature Zone Grid* to answer the following question.

Which piglet noses are the same horizontal distance from the y -axis? How many units away from the y -axis are the noses?

Piglet Number	Coordinates	Units from y -axis
<input type="text"/>	<input type="text"/>	<input type="text"/> units
<input type="text"/>	<input type="text"/>	<input type="text"/> units
<input type="text"/>	<input type="text"/>	<input type="text"/> units
<input type="text"/>	<input type="text"/>	<input type="text"/> units

What do the coordinates in the table have in common?

Question 3

With the more expensive package, the venue charges 5% gratuity for the employees who work at the event. The gratuity is based on the total cost of the event.

- a. Which piglet nose is a reflection over the x -axis of Piglet 12's nose? On the basis of the coordinates, how do you know this is a reflection?

Question 4

Explain the relationship between piglet size and preferred temperature zone.

Question 5

At birth, each piglet needs an area equal to $\frac{1}{12}$ of a square foot. If a newborn piglet needs a rectangular space that is $\frac{1}{6}$ of a foot wide, how wide should the space be? Explain or show how you found the answer.

Question 6

- a. The world's people consume 214 million tons of pigs a year. The average pig weighs 250 pounds and produces 180 pounds of pork. How many pigs do the world's people consume in a year? (1 ton = 2000 pounds)

- b. Assume that 12 is the average number of piglets in a litter. If the mat changes piglet survival rates from 91% to 93%, how many fewer litters are needed to feed the world's people? (To find how many pigs survive from one litter, multiply by 0.91 for 91% and 0.93 for 93%.) Show your work or explain how you found the answer.

Question 7

The average American family of four consumes 240 pounds of pork per year. On the basis of this statistic, compute the average daily pork consumption per person.

Question 8

Write a paragraph explaining the reason why this temperature mat will increase pork production and help feed the world's people.