Money, Money, Money for Pollination Statistics

Name: _____ Date: _____ Period: _____

According to the National Agricultural Statistics Services (NASS), published by the United States Department of Agriculture (USDA), operations can pay to have their land pollinated by honey bees. All information chosen for this exercise applies to the following states (labeled as Region 1): Connecticut, Illinois, Indiana, Iowa, Kansas, Massachusetts, Maine, Michigan, Nebraska, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Wisconsin. Specific crops included in Region 1 were apples, cherries, watermelon, blueberries, cranberries, cucumbers, pumpkins, and squash.

Fact #1: In 2016, it cost $33 per acre to pollinate apples.

a. Write an expression to represent this statement.

b. How much did it cost to pollinate 83,400 acres?

Fact #2: In 2017, it cost $32 per acre to pollinate apples.

a. Write an expression to represent this statement.

b. How much did it cost to pollinate 91,600 acres?

Fact #3: In 2017, it cost $77.70 per colony used to pollinate watermelon.

a. Write an expression to represent this statement.

b. If 2,500 colonies were used to pollinate 4,150 acres, how much did it cost to use the colonies?

Fact #4: In 2016, it cost $29.40 per acre to pollinate cucumbers, $32.40 per acre to pollinate pumpkins, and $32.30 per acre to pollinate squash.

a. Write an expression to represent the cost per acre of cucumbers, c.

b. Write an expression to represent the cost per acre for pumpkins, p.

c. Write an expression to represent the cost per acre for squash, s.

d. How much did it cost to pollinate 29,100 acres of cucumbers?

e. How much did it cost to pollinate 11,200 acres of pumpkins?

f. How much did it cost to pollinate 9,400 acres of squash?

Your Turn!

Directions: Using Tables 1 and 2, create three statements that can be translated into an expression or equation. Below each statement, include a mathematical problem that can be evaluated or solved using the given information. Both tables were adapted from the USDA Cost of Pollination Report (December 2017).

Table 1. 2016 and 2017 Paid Pollinated Acres and Price Per Acre for Region 1 Crops

Statistics for Region 1 States				
Crop	Paid Pollinated Acres (Colonies)		Price per Acre (Dollars)	
	2016	2017	2016	2017
Apple	83,400	91,600	33.0	32.0
Cherry	26,600	29,400	21.9	25.8
Watermelon	5,600	4,150	40.4	28.1
Blueberry	37,500	32,500	147.0	126.0
Cranberry	30,300	29,500	167.0	162.0
Cucumber	29,100	23,000	29.4	44.1
Pumpkin	11,200	8,400	32.4	40.2
Squash	9,400	7,500	32.3	29.7

Table 2. 2016 and 2017 Colonies Used and Price Per Colony for Region 1 Crops

Statistics for Region 1 States				
Crop	Colonies Used (Colonies)		Price per Colony (Dollars)	
	2016	2017	2016	2017
Apple	46,000	47,000	69.9	70.9
Cherry	15,000	14,000	55.0	56.6
Watermelon	3,700	2,500	78.1	77.7
Blueberry	65,000	55,000	88.2	77.3
Cranberry	66,000	61,000	77.9	78.0
Cucumber	15,000	16,500	62.7	67.0
Pumpkin	11,000	9,000	76.8	76.2
Squash	7,500	5,000	74.1	67.8

Student Created Fact #1:

Student Created Fact #2:

Student Created Fact #3:

Optional Extension for Module: Create an infographic that communicates the issues related to the declining bee population. The infographic should include at least six facts from the Honey, Honey, Honey! and/or Money, Money, Money for Pollination! Worksheets and at least two different student created graphs (pie chart, bar graph, line, graph, etc.)