

Chapter 6 Task

/16

Choices, Choices, Choices

A student council is planning a sandwich fundraiser. The council wants to sell two different sandwiches: a meat sandwich and a cheese sandwich.

Casey researched the price of the basic sandwich ingredients: multigrain bread, lettuce, tomatoes, Dijon mustard, mayonnaise, and dill pickles. He found that these ingredients would cost no more than \$0.47, in total, per sandwich.

Ruth researched the prices of meats and cheeses. She made the following list:

Each sandwich will include the basic ingredients and 100 g of meat or cheese.

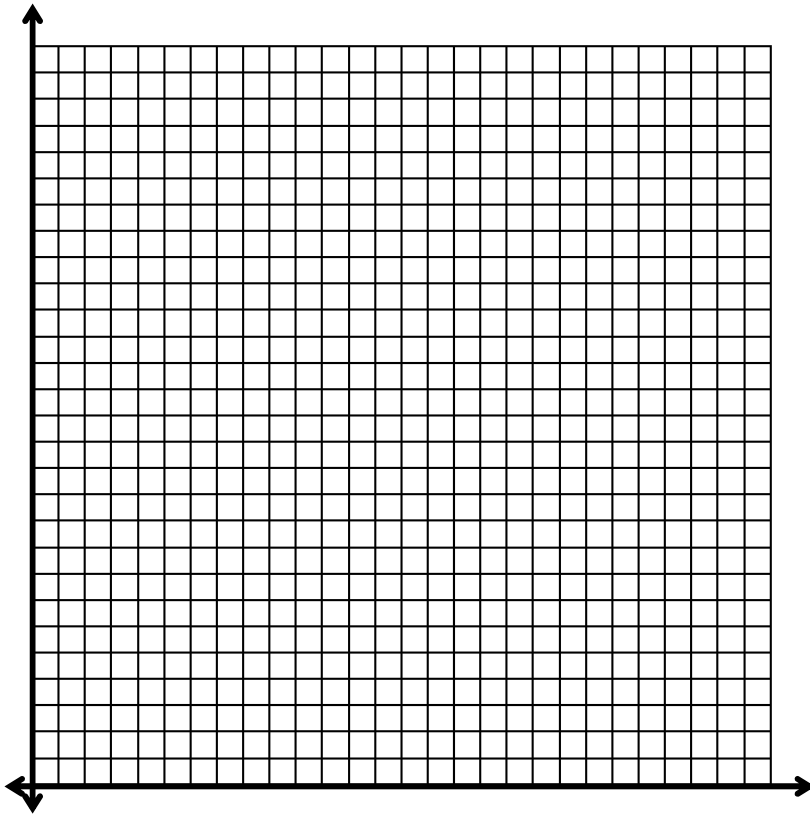
- The council plans to make no more than 360 meat sandwiches and no more than 400 cheese sandwiches.
- The council expects to sell 600 or more sandwiches.

Turkey Breast Deli Meat	\$2.39/100g
Honey Ham Deli Meat	\$1.79/100g
Pastrami Beef, 98% fat free, Deli Meat	\$2.69/100g
Tofu Turkey	\$1.31/100g
Cream Havarti Cheese	\$1.89/100g
Aged Swiss Cheese	\$2.39/100g
Monterey Jack Cheese	\$1.33/100g
Vegan Cheese	\$1.76/100g

**How can the student council minimize its cost?
What will the minimum cost be?**

- A.** Choose a meat and a cheese from Ruth's list for the sandwiches. (2 marks)
- B.** Model the problem Situation (4 marks)
(define your variables, and create the 3 inequalities for the **number** of sandwiches being made)

C. Graph the inequalities and shade the feasible region (where all inequalities are valid) (4 marks)
(Don't forget to label your axis)



D. Write an equation to work out the total cost (don't forget the cost of the basic ingredients) (1 mark)

E. Work out the total cost at **each intersection** of your feasible region. (3 marks)

F. Write a recommendation to the student council on how many sandwiches they should make to minimize the cost. (Write your answer as a complete sentence) (2 marks)