Planning a Concert

Task Statement 1

A charity is raising money by having a concert. You are helping to plan the concert. You need to decide where the concert should take place and how much the tickets should cost. You also need to predict how much profit the charity makes from the concert.

The charity collected data about ticket prices. They chose 100 people at random and asked them, "What is the most that you would pay for a ticket to a charity concert?" Here are the responses:

ticket price ($)	number of people who would pay this amount
10	15
20	22
30	13
40	15
50	17
60	15
65	3

Here are some questions to guide you as you make your plan:

- Based on the information from the survey, how much should tickets cost?
- What kind of performer do you want to have at the concert—a local band? A famous singer? An orchestra? A "battle of the bands," featuring many different groups? Well-known performers may draw a larger crowd, but they also may charge more money. Research the current rates of different performers.
- Research possible concert venues. How much would they cost to rent, and how many people can they hold?
- If the tickets are sold at the price you recommend, which venue creates the most profit?
- Should the charity also sell items at the concert, such as food or T-shirts? If you think so, recommend this also to the charity, and predict how much profit they'll make.

Create a presentation to explain your plan and your reasoning to the charity's directors. Include an estimate of the costs and the profit.

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Task Statement 2

A charity is raising money by having a concert. You are helping to plan the concert. You need to decide where the concert should take place and how much the tickets should cost. You also need to predict how much profit the charity makes from the concert.

The charity has collected some data about ticket prices. They chose 100 people at random and asked them, "What is the most that you would pay for a ticket to a charity concert?" Here are the responses:

ticket price ($)	number of people who would pay this amount
10	15
20	22
30	13
40	15
50	17
60	15
65	3

You can use this information to find out which ticket price brings in the most money. Here is how:

- First, figure out how many people would buy a ticket for $10, how many would buy a ticket for $20, and so on.
- Then create a graph with the ticket price as the independent variable and the number of people who buy tickets as the dependent variable. Plot the points you found in the first step, and then find a linear equation that shows how the number of people depends on the ticket price.
- The amount of money that the charity makes from ticket sales is the ticket price multiplied by the number of people who buy tickets. Use the linear equation you found to create a quadratic equation that shows how the ticket price affects the amount of money the charity makes from ticket sales.

After you have decided on a ticket price, here are some other questions to think about:

- What kind of performer do you want to have at the concert—a local band? A famous singer? An orchestra? A "battle of the bands" featuring many different groups? More famous performers may draw a larger crowd, but they also may be paid more. Research the current rates of different performers.
- Research possible concert venues. How much would they cost to rent, and how many people can they hold?
- If the tickets are sold at the price you recommend, which venue creates the most profit?
- Should the charity also sell items at the concert, such as food or T-shirts? If you think so, recommend this also to the charity, and predict how much profit they'll make.

Create a presentation to explain your plan and your reasoning to the charity's directors. Include an estimate of the costs and the profit.