

ALGEBRA I

Unit Three Project: "Organizing an Event"

OBJECTIVES:

- ✓ Write an algebraic equation.
- ✓ Simplify each side of an algebraic equation.
- ✓ Solve an algebraic equation.

In this unit, you will be spending time setting up and solving algebraic equations in a single variable. You will be using skills learned already involving order of operations and working with real numbers.

*This project will allow you to use your skills to Throughout the unit, you will experience everything you need to learn to complete this project. **This project is worth 50 points, will be scored using the rubric that follows, and is due the day before the unit one exam.***

You are in charge of setting up a music concert at the 17,000 seat Mathamus Center. This is your organization's big chance to make a lot of money. Your organization needs to make exactly \$100,000 on this event. Your job is to determine the cost of the many expenses involved. You must also determine the reserved and general admission ticket prices needed to make the desired profit! Good luck!

DETAILS

1. The Mathamus Center holds 17,000 people. It is anticipated the concert will be sold out!
2. There will be 10,000 reserved seat tickets while the rest will be general admission seat tickets. The reserved seat tickets are more expensive than the general admission seat tickets by \$8 each as they are closer to the stage.
3. The music group performing charges \$55,000 an hour. The performance will last three hours. It will also cost \$5,000 an hour to setup the stage and take it down. Five hours is the estimated time to setup and take down the stage.
4. The cost to rent the Mathamus Center for the evening is \$10,000 per hour. Gates to the center will open two hours before the show which is scheduled to run for three hours.
5. Twenty security guards are needed for the evening. Each gets paid \$25 an hour. Ten of the security guards will need to work five hours each while the other ten will need to work ten hours each.
6. A limousine for the music group will need to be rented from the time two hours before the show starts, through the show, and for one hour after the show. The cost is \$200 for the first hour and \$75 for each additional hour.
7. Twenty ushers and five ticket takers are needed. Each will earn \$15 an hour and will work 5 hours each.
8. A catered meal for all staff will be served. The meal will cost \$16 per person. The music group consists of five people. The group also travels with 16 stage hands. All security guards, ushers, and ticket takers will be served too.
9. The group will need hotel accommodations for two nights. Each member of the group will get his/her own room at a rate of \$200 a night. The stage hands will be put two to a room at a rate of \$125 a night.
10. Concessions for the event are the responsibility of the Mathamus Center.
11. The music group sells various items at the event. Your group will get \$15 for each \$100 of merchandise sold. At the last event of this size, \$23,500 of merchandise was sold. Your group is guaranteed that amount.
12. Transportation of the music group to your city must also be provided. The group travels with four charter buses. The cost per mile for each bus is \$0.85. The group traveled 450 miles to get here.

YOUR ROLE

1. Make a list of the following expenses and show how you arrived at the cost of each.
Setup/Performance/Take Down
Center rental
Security
Limousine
Ushers/Ticket Takers
Catered Meal
Hotel accommodations
Transportation
2. Determine how much money you will earn from the sale of merchandise and show how you arrived at the amount.
3. Create an algebraic equation where x represents the cost of a general admission seat ticket to determine the ticket prices for both reserved and general admission seating. Solve your equation showing your work.
4. Record both your reserved and general admission seating prices.
(SHOW ALL OF THE ABOVE IN A NEAT AND ORDERLY STATEMENT!)
5. Create a poster advertising the concert. This means you will have to create your very own five person music group. Give key information about the concert such as:
Name of the group
Concert location
Date
Time
Cost of reserved tickets
Cost of general admission tickets
Be creative...put it on a regular sized piece of paper.
6. You will turn in two pieces of paper. One will be the advertisement. The second will be your detailed summary of income, expenses, and the work needed to compute each.

RUBRIC FOR SCORING THE PROJECT

- Expense list (3 points each...1 point for correct amount, 2 points for work): 24 pts.
Merchandise revenue (3 points...1 point for correct amount, 2 points for work): 3 pts.
Algebraic equation (3 points if correct)
Ticket prices (4 points for correct prices, 2 points for work): 6 pts.
Advertisement (12 points (key elements-6 points, neatness-3 points, creativity-3 points))
Name on both sheets (1 point each) turned in by class time on the day it is due!