Math Experiment: Owning a Restaurant

**Materials:**

1. Calculators (4)
2. Blank Table for Menu Items and preset prices for each type of restaurant
3. List of cost options for type of restaurant (Fancy, Modern, Fast Food)
4. Blank Table for Compare and Contrast cost, weekly revenue and profit, total profit

**Pre-Experiment:**

1. Students select four items they want to sell at their restaurant and the restaurant name
2. Students will be given the prices and quantity of each of their selected goods

**Purpose:** The goal is to figure out which restaurant will have a higher bill and why. What the kids must understand is that the price of an item is just as important as how many items are sold. Also, just because a higher-end restaurant has higher prices, this does not guarantee that the restaurant will make more money.

**Research Question:** Which does restaurant does Ms. Hughes spend more money at and why?

**Prediction:** Ask students which restaurant they think Ms. Hughes will spend more money at and why.

**Experimental plan:**

1. Calculate the bill for each type of restaurant
   1. Research question: Which restaurant will have the highest bill (which one will be more expensive to eat at?)?
2. Procedure:
   1. One customer - On Saturday, Ms. Hughes orders from two different restaurants:
   2. Students must use multiplication and addition to determine how much money Ms. Hughes spends at each of their restaurants. **\*Bonus points if students can find out how much of the bill each member of the team gets!\***
      * Restaurant #1: 200 + 70 + 10 + 2 = 282 (Lower-end)
        + Bonus: $94/ person
      * Restaurant #2: 70 + 90 + 52 + 16 = 228 (Higher-end)
        + Bonus: $76 / person

|  |  |  |
| --- | --- | --- |
| Items | Restaurant #1 Price | Restaurant #2 Price |
| 1 (high) | $10 (20 items) | $35 (2 items) |
| 2 | $7 (10 items) | $30 (3 items) |
| 3 | $2.50 (4 items) | $ 26 (2 items) |
| 4 (low) | .50 (4 items) | $ 16 (1 item) |

Restaurant Owners: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Restauraunt Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Restauraunt Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| **Name of Food** | **Price** | **Amount of Food Sold** |
|  | $10 | 20 |
|  | $7 | 10 |
|  | $2.50 | 4 |
|  | $0.50 | 4 |

|  |  |  |
| --- | --- | --- |
| **Name of Food** | **Price x Amount Sold** | **How much did you make?** |
|  | $10 x \_\_\_\_ | = $ |
|  | $7 x \_\_\_\_\_ | = $ |
|  | $2.50 x \_\_\_\_ | = $ |
|  | $0.50 x \_\_\_\_ | = $ |

**Ms. Hughes Final Bill**

\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

= $ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Conclusion:** Which restaurant made more and why? Did having higher prices help or did selling more food help? Next time, what do you think your restaurant has to do to make more money?

Restaurant Owners: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Restauraunt Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Restauraunt Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| **Name of Food** | **Price** | **Amount of Food Sold** |
|  | $35 | 2 |
|  | $30 | 3 |
|  | $26 | 2 |
|  | $16 | 1 |

|  |  |  |
| --- | --- | --- |
| **Name of Food** | **Price x Amount Sold** | **How much did you make?** |
|  | $35 x \_\_\_\_ | = $ |
|  | $30 x \_\_\_\_\_ | = $ |
|  | $26 x \_\_\_\_ | = $ |
|  | $16 x \_\_\_\_ | = $ |

**Ms. Hughes Final Bill**

\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

= $ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Conclusion:** Which restaurant made more and why? Did having higher prices help or did selling more food help? Next time, what do you think your restaurant has to do to make more money?