Application of Systems of Equations   Name: _____

For each problem, define your variables, write a system of two equations from the information. We will check the equations during our next class before we start solving.

1) The state fair is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 8 vans and 8 buses with 240 students. High School B rented and filled 4 vans and 1 bus with 54 students. Every van had the same number of students in it as did the buses. Find the number of students in each van and in each bus.

Define variables. x = _____   y = _____

Equations: _____

                  _____

2) The senior classes at High School A and High School B planned separate trips to New York City. The senior class at High School A rented and filled 1 van and 6 buses with 372 students. High School B rented and filled 4 vans and 12 buses with 780 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

Define variables. x = _____   y = _____

Equations: _____

                  _____

3) Brenda's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 3 senior citizen tickets and 9 child tickets for a total of $75. The school took in $67 on the second day by selling 8 senior citizen tickets and 5 child tickets. What is the price each of one senior citizen ticket and one child ticket?

Define variables. x = _____   y = _____

Equations: _____

                  _____

4) Matt and Ming are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. Matt sold 3 small boxes of oranges and 14 large boxes of oranges for a total of $203. Ming sold 11 small boxes of oranges and 11 large boxes of oranges for a total of $220. Find the cost each of one small box of oranges and one large box of oranges.

Define variables. x = _____   y = _____

Equations: _____

                  _____

5) At a restaurant the cost for a breakfast taco and a small glass of milk is $2.10. The cost for 2 tacos and 3 small glasses of milk is $5.15. Which pair of equations can be used to determine t, the cost of a taco, and m, the cost of a small glass of milk?

Define variables. x = _____   y = _____

Equations: _____

                  _____

6) A large pizza at Palanzio's Pizzeria costs $6.80 plus $0.90 for each topping. The cost of a large cheese pizza at Guido's Pizza is $7.30 plus $0.65 for each topping. How many toppings need to be added to a large cheese pizza from Palanzio's Pizzeria and Guido's Pizza in order for the pizzas to cost the same, not including tax?

Define variables. x = _____ y = _____

Equations: _____

_____

7) Marcos had 15 coins in nickels and quarters. He had 3 more quarters than nickels. He wrote a system of equations to represent this situation, letting x represent the number of nickels and y represent the number of quarters. Then he solved the system by graphing. What is the solution?

Define variables. x = _____ y = _____

Equations: _____

_____

8) Some students want to order shirts with their school logo. One company charges $9.65 per shirt plus a setup fee of $43. Another company charges $8.40 per shirt plus a $58 fee. For what number of shirts would the cost be the same?

Define variables. x = _____ y = _____

Equations: _____

_____

9) Mrs. Travis wants to have a clown deliver balloons to her secretary's office. Clowns R Fun charges $1.25 per balloon and $6 delivery. Singing Balloons charges $1.95 per balloon and $2 for delivery. What is the minimum number of balloons Mrs. Travis needs to purchase in order for Clowns R Fun to have a lower price than Singing Balloons?

Define variables. x = _____ y = _____

Equations: _____

_____

10) A total of 95 theme park tickets were sold for $960. Each adult ticket cost $12 and each child's ticket cost $9. Find the number of adult tickets and the number of children's tickets sold.

Define variables. x = _____ y = _____

Equations: _____

_____

11) A vending machine only accepts dimes and quarters. There are 85 coins in the machine with a total value of $16.75. How many of each coin are in the machine?

Define variables. x = _____ y = _____

Equations: _____

_____