

Name: _____

Date: _____

Applications of Systems of Equations

For each word story problem, write the equations, the corresponding matrix and the answers.

1. Next week, your math teacher is giving a chapter test worth 100 points. The test will consist of 35 problems. Some problems are worth 2 points and others are worth 4 points. How many problems of each value are on the test?

ans. _____

2. You are selling tickets for a musical at your local community college. Student tickets cost \$5 and general admission tickets cost \$8. If you sell 500 tickets and collect \$3475, tell how many student tickets were sold and how many general admission tickets were sold.

ans. _____

3. A landscaping company placed two orders with a nursery. The first order was for 13 bushes and 4 trees and totaled \$487. The second order was for 6 bushes and 2 trees, and totaled \$232. The bills do not list the per-item price. What was the cost of each bush and each tree?

ans. _____

4. The Madison Local High School marching band sold gift wrap to earn money for a band trip to Orlando, Florida. The gift wrap in solid colors sold for \$4.00 per roll, and the print gift wrap sold for \$6.00 per roll. The total number of rolls sold was 480, and the total amount of money collected was \$2340. How many rolls of each type of gift wrap were sold?

ans. _____

5. Two small pitchers and one large pitcher can hold 8 cups of water. One large pitcher minus one small pitcher constitutes 2 cups of water. How many cups of water can each pitcher hold?

ans. _____

6. A farmhouse shelters 11 animals. Some are goats and some are ducks. Altogether there are 34 legs. How many of each animal are there?

ans. _____

7. A test has 20 questions worth 100 points. The test consists of True/False questions worth 3 points each and multiple choice questions worth 11 points each. How many multiple choice questions are on the test?

ans. _____

8. Wilson and Steve decide to spend the afternoon at an amusement park enjoying their favorite activities, the water slide and the gigantic Ferris wheel. Their tickets are stamped each time they slide or ride. At the end of the afternoon they have the following tickets:

Fun Time Amusements

Water Slide: $\diamond \diamond \diamond$

Ferris Wheel: $\diamond \diamond \diamond$

Total: \$17.70

Wilson's Ticket

Fun Time Amusements

Water Slide: $\diamond \diamond$

Ferris Wheel: $\diamond \diamond \diamond$

Total: \$15.55

Steve's Ticket

a. How much does it cost to ride the Ferris Wheel?

b. How much does it cost to ride the Water Slide?

ans. _____

9. At a high school championship basketball game, 1200 tickets were sold. Student tickets cost \$1.50 each and adult tickets cost \$5.00 each. The total revenue for the game was \$3200. How many student tickets were sold? How many adult tickets were sold?

ans. _____

10. A small town is hosting a play as a fundraising project for a family in the town. Individuals may purchase tickets for \$26 each. As a special incentive to attract couples, individuals may purchase a "couple's package" for \$32. [Note: The "couple's package" allows 2 people to attend the play for the price of \$32.] On the first day of sales, 23 tickets were sold and \$694 was collected. How many tickets were sold to individuals for \$26 each? How many people were convinced to buy the "couple's package"?

ans. _____

11. The treasurer of the student body of a college reported that the receipts from a recent concert totaled \$916. Furthermore, he announced that 560 people had attended the concert. Students were charged \$1.25 each for admission to the concert, and adults were charged \$2.25 each. How many adults attended the concert?

ans. _____

12. Five hundred tickets were sold for a Saturday day evening performance of a play. The tickets cost \$7.50 for adults and \$4.00 for children. A total of \$3312.50 was received for all the tickets sold that Saturday evening. How many adults attended the play?

ans. _____

13. Sally wants to buy some accessories for her hair. She can buy two clips and four barrettes for \$12.50 or one clip and 6 barrettes for \$12.25. How much does it cost to buy one clip?

ans. _____

14. Mr. MacDonald raises ducks and cows. The animals have a total of 32 heads and 72 feet. How many ducks and how many cows does Mr. MacDonald have?

ans. _____

15. Jonah sells popcorn and peanuts at the game. Each bag of popcorn costs \$1.50 and each bag of peanuts costs \$2.25. One night he sold a total of 300 items and made \$622.50. How many of each item did he sell?

ans. _____

16. Donna has a change purse that contains Quarters, Loonies and Toonies. Donna was bored, so she counted the number of coins and found that there were 53 coins. She found the value of the coins to be \$47.00. She also found that there were 11 more Quarters than Loonies and Toonies combined. How many of each type of coin did Donna have? (**Note: Loonies have a value of 1 Canadian dollar and Toonies are worth \$2 Canadian.**)

ans. _____

17. Ronaldo has \$1.15 in dimes and nickels. The number of nickels is 5 less than twice the number of dimes. Find the number of each type of coin.

ans. _____

18. A school has planned a field trip for its students. Each bus will seat 51 people and each van will seat 8. With 150 students in 8 vehicles, how many buses and vans are taken?

ans. _____

19. A basketball field house seats 15,000. Court side seats cost \$12, end zone seats cost \$9, and balcony seats cost \$6. The total revenue for a sellout is \$114,000. If half of the court side seats, half of the balcony seats and all of the end zone seats are sold, then the total revenue is \$66,000. How many of each type of seat are there?

ans. _____

20. Molly's Custom Kitchen Supplies sells handmade forks and spoons. It costs the store \$1.70 to buy the supplies to make a fork and \$1.30 to buy the supplies to make a spoon. The store sells forks for \$5.60 and spoons for \$5.40. Last April Molly's Custom Kitchen Supplies spent \$37.90 on materials for forks and spoons. They sold the finished products for a total of \$147.20. How many forks and how many spoons did they make last April?

ans. _____

21. A campus bookstore received two shipments from Apple. The first shipment contained six iPods and eight MacBooks, and the cost to the bookstore was \$6,840. The second shipment contained three iPods and five MacBooks, which cost the bookstore \$4,170. Find the per-unit cost of an iPod and a MacBook.

ans. _____

22. Pablo bought three bags of chips and two bottles of soda and paid \$9.15. His friend Michael bought two bags of chips and four bottles of soda for \$8.74. What is the price for a bag of chips? What is the price for a bottle of soda?

ans. _____

23. The school that Stefan goes to is selling tickets to a choral performance. On the first day of ticket sales the school sold 3 senior citizen tickets and 1 child ticket for a total of \$38. The school took in \$52 on the second day by selling 3 senior citizen tickets and 2 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

ans. _____