

Algebra 2

Systems of Equations Project

- I. Given a word problem using 2 equations in 2 unknowns. (Extra Credit if you make one up). Set up the equations and solve using 3 different methods. (Graphing, substitution, elimination,)
- II. Turn in a computer typed paper clearly stating the problem. Showing the equations and a step-by-step explanation of how you solved your problem using your 3 methods, and how you checked the problem. Make sure your answer answers your question. (A hand written paper showing the work is acceptable if it is neat and legible.)
- III. Turn in a summary statement explaining which method you liked the most and why. Also, a statement about which method you liked the least and why.
- IV. The project counts as a quiz grade and will be graded on neatness, completeness and correctness.

Grading

Stated problem	_____ /5
Work on 3 methods	_____ /21
Summary statement of liked	_____ /5
Summary statement of disliked	_____ /5
Neatness/Creativity of Display	_____ /4
	_____ /40

** 2 point off EVERY DAY it is late. DUE

Systems of Equations Project equations

1. A collection of 77 quarters and dimes is worth \$12.50. How many quarters and dimes are there?
2. Museum passes cost \$5 for adults and \$2 for children. One day the museum sold 1820 passes for \$6106. How many of each type were sold?
3. A grocer mixes cashews and almonds. A mixture of 4 pounds of cashews and 6 pounds of almonds cost \$62. A mixture of 2 pounds of cashews and 8 pounds of almonds cost \$54. What is the cost per pound of cashews and almonds?
4. Jennifer's bill for 6 cans of grape juice and 4 cans of apple juice was \$13.10. When she got home she found that she should have bought 4 cans of grape juice and 6 cans of apple juice. Although she mixed up the order, she did save 60 cents. What is the cost per can of apple and grape juice?
5. In a carnival game, you earn 5 points for each bull's eye and lose 10 for each miss. After 30 tries Dan's overall score was -90. How many bull's eyes did he hit?
6. A mathematician turned farmer has cows and chickens. He tells you that among the cows and chickens, there are 148 legs and 60 heads. How many cows and chickens are on his farm?
7. Jessica walks for 1 hour and cycles for 2 hours, traveling 68 km. She then walks for 2 hours and cycles for 1 hour, traveling 46 km. What are her average speeds for walking and cycling?
8. Michael pays \$2.94 for a pint of milk and 2 pints of juice. He wanted 2 pints of milk and one pint of juice, but didn't buy it because it cost \$3.12 and he only had \$3 in his pocket. What are the cost of a pint of milk and a pint of juice individually?
9. The length of your garden must exceed the width of the garden by 3 feet. You only have 58 feet of fencing to go around the perimeter. If you use all the fencing, what will be the dimensions of your garden?
10. A movie theater charges \$8 for an adult ticket and \$5 for a student ticket. One night, 380 tickets were sold for a total of \$2377. How many of each type were sold?

11. Before a hiking trip, Rachel mixed 3 pounds of peanuts and raisins to bring along. The peanuts cost \$4.29 per pound and the raisins cost \$3.49 per pound. The whole mix cost \$11.43. How many pounds of peanuts and raisins did Rachel have?
12. This year the total number of dogs and cats sold by the Animal Adoption Agency was 1216. Last year, 420 more cats, and double the number of dogs were sold for a total of 2024. How many of each were sold this year?
13. How many pounds of dried apples worth \$5 per pound should be mixed with how many pounds of dried apricots worth \$9 per pound to make 10 pounds of mixture worth \$77?
14. You and a group of friends go to a Mexican restaurant. Your group buys 14 small plates and 8 large plates for \$87.40. Large plates cost \$1.30 more than small plates. What is the cost of the large plates? Of the small plates?
15. The phone company charges you a different rate for the first minute of a call than each additional minute. You see on your bill that a 12 minute call costs \$2.03, and an 18 minute call cost \$2.87. What are the cost of the first minute and each additional minute?
16. Last year the volleyball team paid \$5 per pair of socks and \$17 per pair for shorts on a total purchase of \$315. This year they spent \$342 to buy the same pairs of socks and shorts because now socks cost \$6 and shorts \$18. How many pairs of socks and shorts did the team buy each year?
17. Suzy is ten years older than Billy, and next year she will be twice as old as Billy. How old are they now?
18. The first stage of a rocket burns 28 seconds longer than the second stage. If the total burning time for both stages is 152 seconds, how long does each stage burn?

19. In a student election, 584 students voted for one or the other of two candidates for president. If the winner received 122 more votes than the loser, how many votes were cast for each candidate?
20. How many liters of a 10% solution of acid should be mixed with 60% solution of acid to obtain a 20 liters of 50% solution?
21. I have \$11.60, all dimes and quarters, in my pocket. I have 32 more dimes than quarters. How many dimes, and how many quarters, do I have?
22. A man is nine times as old as his son. In nine years, he will be only three times as old as his son. How old are each now?
23. The admission fee at a small fair is \$1.50 for children and \$4.00 for adults. On a certain day, 2200 people enter the fair and \$5050 is collected. How many children and how many adults attended?
24. How many liters of a 20% solution of acid should be mixed with 50% solution of acid to obtain a 9 liters of 30% solution?
25. A landscaping company placed two orders with a nursery. The first order was for 13 bushes and 4 trees, and totalled \$487. The second order was for 6 bushes and 2 trees, and totalled \$232. The bill does not list the per-item price. What is the cost of one bush and of one tree?
26. A passenger jet took three hours to fly 1800 miles in the direction of the jetstream. The return trip against the jetstream took four hours. What was the jet's speed in still air and the jetstream's speed?