

Writing Systems of Equations

Step 1: Define the variables.

Step 2: Write 2 equations from the phrases.

Step 3: Use substitution, elimination, or graphing to solve for variables.

Step 4: Answer question using proper units.

Slope Intercept Form: Scenarios that lend themselves to fit the $y = mx + b$ format.

Example: You pay \$2 to ride in a taxi and \$.20 per mile.

Total Items Form: Scenarios that deal with buying two or more types of items.

Example: You are buying cokes and sprites for 10 people.

Total Price Form: Scenarios that deal with buying two or more types of items and paying a total price.

Example: You are buying hot dogs for \$2 each and hamburgers for \$3 each. You spend \$13 total.

1) The difference of two numbers is 7. The sum of the two numbers is 29. Find the two numbers.

2) You have 25 coins in your pocket, all nickels and dimes. Total, the coins add up to \$2.10. How many of each do you have?

3) You went to Pizza Hut. The first time, you bought 3 breadsticks and 2 pizzas; it cost you \$26. The second time, you bought 1 breadstick and 5 pizzas; it cost you \$39. How much does a single breadstick cost? How much does a single pizza cost?

4) You are selling tickets for a high school play. Student tickets cost \$4 and general admission tickets cost \$6. You sell 31 tickets and collect \$170. How many of each type did you sell?

5) Two planes are currently landing at Hartsfield. One plane is descending at 300 feet per minute from 9000 feet. The other is descending at 200 feet per minute from 6000 feet. When will they be at the same height and at what time will that be?

Systems of Linear Equations – Word Problems – Practice #1

1) You worked 18 hours last week and earned a total of \$124 before taxes. Your job as a lifeguard pays \$8 per hour, and your job as a cashier pays \$6 per hour. How many hours did you work at each job?

x : _____ y: _____

2) A math test is to have 20 questions. The test format uses multiple choice worth 5 points each and problem solving worth 6 points each. The test has a total of 100 points. How many of each type of questions are used?

x : _____ y: _____

3) Resort A charges \$70 per night, plus a one-time surcharge of \$5. Resort B charges \$65 per night, plus a one-time surcharge of \$20. After how many nights will the total cost be the same?

x : _____ y: _____

4) A vendor sold 200 tickets for an upcoming concert. Floor seats were \$36 and stadium seats were \$28. The vendor sold \$6,080 in tickets. How many \$36 and \$28 tickets did the vendor sell?

x : _____ y: _____

5) A hair salon receives a shipment of 84 bottles of hair conditioner to use and sell to customers. The two types of conditioners received are Type A, which is used for regular hair, and Type B, which is used for dry hair. Type A costs \$6.50 per bottle and Type B costs \$8.25 per bottle. If the hair salon's invoice for the conditioner is \$588, how much of each type are in the shipment?

x : _____ y: _____

6) Your school sells short sleeve T-shirts that cost the school \$5 each and are sold for \$8 each. Long sleeve T-shirts cost the school \$7 each and are sold for \$13 each. The school spends a total of \$2,450 on T-shirts and sells all of them for \$4,325. How many of each type of T-shirt are sold?

x : _____ y: _____

Systems of Linear Equations – Word Problems – Practice #2

- 1) You sell tickets for admission to your school play and collect a total of \$104. Admission prices are \$6 for adults and \$4 for children. You sold 21 tickets. How many adult tickets and how many children tickets did you sell?
- 2) Your family goes to a restaurant for dinner. There are 6 people in your family. Some order the chicken dinner for \$14.80 and some order the steak dinner for \$17. If the total bill was \$91, how many people ordered each type of dinner?
- 3) You bought the meat for Saturday's cookout. A package of hotdogs cost \$1.60 and a package of hamburger costs \$5. You bought a total of 8 packages of meat and you spent \$23. How many packages of hamburger meat did you buy?

4) Casey orders 3 pizzas and 2 orders of breadsticks for a total of \$29.50. Rachel orders 2 pizzas and 3 orders of breadsticks for a total of \$23. How much does a pizza cost?

5) Rent-A-Car rents compact cars for a fixed amount per day plus a fixed amount for each mile driven. Benito rented a car for 6 days, drove it 550 miles, and spent \$337. Lisa rented the same car for 3 days, drove it 350 miles and spent \$185. What is the charge per day and the charge per mile for the compact car?

6) Beach Hotel in Cancun is offering two weekend specials. One includes a 2-night stay with 3 meals and costs \$195. The other includes a 3-night stay with 5 meals and costs \$300. What is the cost of a single meal?