

At the end of the first quarter, Ms. Colón receives a statement indicating a return of \$58 on her investment. How did the broker divide Ms. Colón's initial investment?

20. Critical Thinking Write a system of equations that fits each description.

- The system has a solution of $x = -5$, $y = 9$, $z = 11$.
- There is no solution to the system.
- The system has an infinite number of solutions.

21. Physics Each year the Punkin' Chunkin' contest is held in Lewes, Delaware. The object of the contest is to propel an 8- to 10-pound pumpkin as far as possible. Steve Young of Hopewell, Illinois, set the 1998 record of 4026.32 feet. Suppose you build a machine that fires the pumpkin so that it is at a height of 124 feet after 1 second, the height at 3 seconds is 272 feet, and the height at 8 seconds is 82 feet. Refer to the formula in Exercise 7 to find the acceleration, the initial velocity, and the initial height of the pumpkin.



22. Critical Thinking Suppose you are using elimination to solve a system of equations.

- How do you know that a system has no solution?
- How do you know when it has an infinite number of solutions?

23. Number Theory Find all of the ordered triples (x, y, z) such that when any one of the numbers is added to the product of the other two, the result is 2.