

RoundTable

Algebra 1

Solving Algebra Word Problems with a System of Equations

Solving Algebra Word Problems with a System of Equations

Directions: Solve the problem below algebraically using TWO variables.

One day Phil purchased 3 loaves of bread and 2 apples for a total of \$3.60. A few days later, on the same store, he purchased 2 loaves of bread and 1 apple for a total of \$2.40. What is the price of a single loaf of bread and a single apple?

Person 1: Establish the variables for statements 1.

Person 2: check and initial.

Person 2: Write the system of equations needed to solve the problem. (Don't solve it)

Person 3: check and initial.

Person 3: solve the system of equations for .

Person 4: check and initial.

Person 4: solve for the remaining variable.

Person 5: check and initial.

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Solving Algebra Word Problems with a System of Equations

Directions: Solve the problem below algebraically using TWO variables.

Frequent High school tickets for a school musical. Orchestra seats cost \$4 each and balcony seats cost \$2 each. A total of 200 tickets were sold and total cost collected. How many of each type of ticket were sold?

Person 1: Establish the variables for statements 1.

Person 2: check and initial.

Person 2: Write the system of equations needed to solve the problem. (Don't solve it)

Person 3: check and initial.

Person 3: solve the system of equations for .

Person 4: check and initial.

Person 4: solve for the remaining variable.

Person 5: check and initial.

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OBJECTIVES

Given a word problem, students will establish two variables, write a system of two linear equations, solve the system, and use their result to answer the question posed.

MATERIALS

Pencils and RoundTable Worksheets (see following pages)

PREREQUISITE LEARNING

Students should be able to write algebraic equations based on verbally presented problems. They should also be able to solve a system of two linear equations using the addition method and/or the substitution method.

POSSIBLE EXTENSION

Once students have mastered solving a system of equations algebraically, they can then solve a system of equations graphically. New RoundTable worksheets can be created for graphic solutions (Person 1 establishes the variables, Person 2 writes the equations, Person 3 graphs one equation, Person 4 graphs the second equation, Person 1 determines the solution and checks it). For problems whose solutions involve decimals, problems can be solved using a graphing calculator.

Solving Algebra Word Problems with a System of Equations

Names:

Directions: Solve the problem below algebraically using **TWO** variables...

One day Phil purchased 5 loaves of bread and 3 muffins for a total of \$8.00. A few days later, at the same store, he purchased 2 loaves of bread and 6 muffins for a total of \$5.60. What is the price of a single loaf of bread and a single muffin?

Person 1: Establish the variables ("let" statements)

Person 2 check and initial: _____

Person 2: Write the system of equations needed to solve the problem. (Do not solve it)

Person 3 check and initial: _____

Person 3: Solve the system of equations for one variable only!

Person 4 check and initial: _____

Person 4: Solve for the remaining variable

Person 1 check and initial: _____

Solving Algebra Word Problems with a System of Equations

Names:

Directions: Solve the problem below algebraically using TWO variables...

Freeport High sold tickets for a school musical. Orchestra seats cost \$6 each and balcony seats cost \$4 each. A total of 200 tickets was sold and \$960 was collected. How many of each type of ticket was sold?

Person 1: Establish the variables ("let" statements)

Person 2 check and initial: _____

Person 2: Write the system of equations needed to solve the problem. (Do not solve it)

Person 3 check and initial: _____

Person 3: Solve the system of equations for one variable only!

Person 4 check and initial: _____

Person 4: Solve for the remaining variable

Person 1 check and initial: _____

Solving Algebra Word Problems with a System of Equations

Names:

Directions: Solve the problem below algebraically using **TWO** variables...

Renee collects baseball cards and football cards. The number of baseball cards is 10 more than twice the number of football cards. All together, Renee has 70 cards. How many of each type of card does Renee have?

Person 1: Establish the variables ("let" statements)

Person 2 check and initial: _____

Person 2: Write the system of equations needed to solve the problem. (Do not solve it)

Person 3 check and initial: _____

Person 3: Solve the system of equations for one variable only!

Person 4 check and initial: _____

Person 4: Use substitution to solve for the remaining variable.

Person 1 check and initial: _____

Solving Algebra Word Problems with a System of Equations

Names:

Directions: Solve the problem below algebraically using TWO variables...

Person 1: Establish the variables ("let" statements)

Person 2 check and initial: _____

• • • • •
Person 2: Write the equation needed to solve the problem. (Do not solve it)

Person 3 check and initial: _____

• • • • •
Person 3: Solve the system of equations for one variable only!

Person 4 check and initial: _____

• • • • •
Person 4: Use substitution to solve for the remaining variable.

Person 1 check and initial: _____