

CH.5, L7 – Solving Systems by Picking the Best Strategy

Objective: Given a real-world situation, I will write a system of equations and determine the most efficient strategy for solving based on the structure of the equations in the system.

Think About It: For the two situations below, write a system of equations to represent the context and explain the best method you would use solve each one (do not actually solve the problem)

- a) A cab company charges a \$4 flat rate and \$1 per mile. Uber only charges \$2 per mile. How many miles can you travel in the cab and using Uber and still pay the same amount?

Define variables: *(What we don't know)*

System of equations:

Best method to solve elimination/substitution because _____

- b) 4 pencils and 2 markers costs \$2 at the school store. How much does one pencil and one marker cost if 4 pencils and 4 markers costs \$3?

Define variables: *(What we don't know)*

System of equations:

Best method to solve elimination/substitution because _____

Big Idea:

CFS:

1. Situations are annotated for key information
2. System of equations is written and variables are defined
3. System is solved with most efficient method

Interaction with New Material: A building company sells bricks and stones by their total weight. Tariq is waiting in line to purchase 100 bricks and 50 stones. The sign over the register says “2 stones are the same weight as 3 bricks”. The customer ahead of him in line bought 10 bricks and 30 stones and the total weight came out to be 165 pounds. If it costs \$2 per pound, how much will Tariq pay?

Define variables: *(What we don't know)*

System of equations:

Best method to solve elimination/substitution because _____

Solve System:

Think about problem *(What we trying to figure out?)*

It will cost Tariq _____

- CFS:
1. Situations are annotated for key information
 2. System of equations is written and variables are defined
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Partner Practice:

1. In March, there will be two conferences: one for math and one for history. So far, 7 people have signed up for the math conference and two more people sign up each day. There are 11 people who have signed up for the history conference, but only one more person signs up each day. After how many days will the number of people attending both conferences be the same?

Define variables: *(What we don't know)*

System of equations:

Best method to solve elimination/substitution because _____

Solve System:

Think about problem *(What we trying to figure out?)*

After _____ days _____

- CFS:
1. Situations are annotated for key information
 2. System of equations is written and variables are defined
 3. System is solved with most efficient method

2. Jack bought 3 slices of cheese pizza and 4 slices of mushroom pizza for a total cost of \$12.50. Grace bought 3 slices of cheese pizza and 2 slices of mushroom pizza for a total cost of \$8.50. What is the cost of one slice of mushroom pizza?

Define variables: *(What we don't know)*

System of equations:

Best method to solve elimination/substitution because _____

3. 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?

Define variables: *(What we don't know)*

System of equations:

Best method to solve elimination/substitution because _____

CFS:

1. Situations are annotated for key information
2. System of equations is written and variables are defined
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4. The New York Yankees and the Cincinnati Reds together have won a total of 31 World Series. The Yankees have won 5.2 times as many as the Reds. How many World Series did each team win?

Define variables: *(What we don't know)*

System of equations:

Best method to solve elimination/substitution because _____

5. Mr. Alfred's favorite number plus Mr. Cox's favorite number is 28. The difference between Mr. Alfred's number and twice Mr. Cox's number is 10. What is the product of their favorite numbers?

Define variables: *(What we don't know)*

System of equations:

Best method to solve elimination/substitution because _____

CFS:

1. Situations are annotated for key information
2. System of equations is written and variables are defined
3. System is solved with most efficient method

6. The length of a rectangle is 1 meter less than twice its width. The perimeter of the rectangle is 40 meters. What is the area of the rectangle?

Define variables: *(What we don't know)*

System of equations:

Best method to solve elimination/substitution because _____

CFS:

1. Situations are annotated for key information
2. System of equations is written and variables are defined
3. System is solved with most efficient method