LESSON MAKER PRO

System Solve Sprint

Use substitution and elimination to find each shared solution.

HIGH SCHOOL · HSA-REI.C

CCSS.Math.Content.HSA-REI.C "Solve systems of equations"

NAME _____ DATE _____

FIND THE SHARED PAIR

A solution to a system is an ordered pair that makes both equations true. Use substitution or elimination to get one variable alone, then substitute back and check the pair in both equations.

WORKED EXAMPLE

Solve the system: $2x + y = 17$ $x - y = 1$

1. From $x - y = 1$, write $y = x - 1$.
2. Substitute: $2x + (x - 1) = 17$.
3. Simplify: $3x = 18$, so $x = 6$.
4. Substitute back: $y = 5$.

Answer: (6, 5)

PRACTICE 6 problems

1 Solve the system: $4x + y = 36$ $x + y = 15$

ANSWER _____

2 Solve the system: $7x - y = 45$ $x + y = 19$

ANSWER _____

3 Solve the system: $9x + 4y = 131$ $x + y = 19$

ANSWER _____

4 Solve the system: $8x + 7y = 149$ $x + y = 20$

ANSWER _____

5 Solve the system: $y = 4x - 12$ $9x - y = 47$

ANSWER _____

6 Solve the system: $11x - 7y = 41$ $x + y = 25$

ANSWER _____

APPLY IT Show your work

1 At a school event, 4 stickers and 9 pins cost $100. A different bundle of 9 stickers and 4 pins costs $95. What is the cost of one sticker and one pin?

WORK SPACE

ANSWER _____

2 For an esports event, 8 student passes and 4 guest passes cost $100. A group with 4 student passes and 8 guest passes costs $92. What is the price of each type of pass?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Without graphing, determine how many solutions this system has. Explain how you know. $4x + 7y = 9$ $32x + 56y = 72$

WORK SPACE AND ANSWER

ANSWER KEY # System Solve Sprint

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve the system: 4x + y = 36 x + y = 15	**(7, 8)**
2	Solve the system: 7x - y = 45 x + y = 19	**(8, 11)**
3	Solve the system: 9x + 4y = 131 x + y = 19	**(11, 8)**
4	Solve the system: 8x + 7y = 149 x + y = 20	**(9, 11)**
5	Solve the system: y = 4x - 12 9x - y = 47	**(7, 16)**
6	Solve the system: 11x - 7y = 41 x + y = 25	**(12, 13)**

PART 2 · APPLY IT

1. **Sticker: $7; pin: $8** Let s be the sticker cost and p be the pin cost. Solve 4s + 9p = 100 and 9s + 4p = 95 to get p = 8 and s = 7.
2. **Student pass: $9; guest pass: $7** Let s be the student-pass price and g be the guest-pass price. Solve 8s + 4g = 100 and 4s + 8g = 92 to get g = 7 and s = 9.

CHALLENGE

Infinitely many solutions. The second equation is 8 times the first equation, so both equations represent the same line.

Accept equivalent ordered-pair notation and correct variable labels in the word problems. For the challenge, accept any explanation that identifies the second equation as 8 times the first equation.