LESSON MAKER PRO

Pair Check Mission

Test each ordered pair in both equations.

GRADE 8 · MA.8.AR.4.1

MA.8.AR.4.1 "Given a system of two linear equations and a specified set of possible solutions, determine which ordered pairs satisfy the system of linear equations."

NAME _____ DATE _____

CHECK BOTH EQUATIONS

Substitute the x-value and y-value from an ordered pair into each equation. An ordered pair satisfies a system only if it makes both equations true.

WORKED EXAMPLE

Does (7, 2) satisfy the system $9x + y = 65$ and $x - y = 5$?

1. Substitute $x = 7$ and $y = 2$ into $9x + y = 65$.
2. $9(7) + 2 = 65$, so the first equation is true.
3. Substitute into $x - y = 5$: $7 - 2 = 5$, so the second equation is true.

Answer: (7, 2) satisfies the system.

PRACTICE 6 problems

1 Which ordered pair satisfies the system $x + y = 19$ and $x - y = 3$? Possible pairs: (11, 8), (8, 11), (12, 6)

ANSWER _____

2 Which ordered pair satisfies the system $3x + y = 28$ and $x + y = 12$? Possible pairs: (8, 4), (6, 6), (10, 3)

ANSWER _____

3 Which ordered pair satisfies the system $x + 4y = 30$ and $x - y = 10$? Possible pairs: (14, 4), (18, 3), (10, 6)

ANSWER _____

4 Which ordered pair satisfies the system $6x + y = 44$ and $x + y = 14$? Possible pairs: (6, 8), (8, 6), (4, 10)

ANSWER _____

5 Which ordered pair satisfies the system $x + y = 4$ and $3x - y = 12$? Possible pairs: (4, 0), (3, 1), (0, 4)

ANSWER _____

6 Which ordered pair satisfies the system $x + y = 16$ and $3x - y = 8$? Possible pairs: (6, 10), (10, 6), (8, 8)

ANSWER _____

APPLY IT Show your work

1 For a school concert, x is the number of regular tickets and y is the number of VIP tickets sold. A total of 10 tickets were sold. Regular tickets cost $4, VIP tickets cost $6, and the total collected was $48. Which possible pair shows the number of regular and VIP tickets sold? Possible pairs: (6, 4), (4, 6), (8, 3)

WORK SPACE

ANSWER _____

2 At an arcade, x is the number of four-token games and y is the number of three-token games played. A student plays 14 games and uses 50 tokens. Which possible pair shows the numbers of each type of game? Possible pairs: (8, 6), (6, 8), (10, 4)

WORK SPACE

ANSWER _____

CHALLENGE One step up

All of these pairs make x + y = 21. Without solving the system, determine which pair also makes 3x - y = 19. Explain how you know. Possible pairs: (10, 11), (11, 10), (8, 13), (6, 15), (4, 17)

WORK SPACE AND ANSWER

ANSWER KEY

Pair Check Mission

GRADE 8 · MA.8.AR.4.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Which ordered pair satisfies the system x + y = 19 and x - y = 3? Possible pairs: (11, 8), (8, 11), (12, 6)	**(11, 8)**
2	Which ordered pair satisfies the system 3x + y = 28 and x + y = 12? Possible pairs: (8, 4), (6, 6), (10, 3)	**(8, 4)**
3	Which ordered pair satisfies the system x + 4y = 30 and x - y = 10? Possible pairs: (14, 4), (18, 3), (10, 6)	**(14, 4)**
4	Which ordered pair satisfies the system 6x + y = 44 and x + y = 14? Possible pairs: (6, 8), (8, 6), (4, 10)	**(6, 8)**
5	Which ordered pair satisfies the system x + y = 4 and 3x - y = 12? Possible pairs: (4, 0), (3, 1), (0, 4)	**(4, 0)**
6	Which ordered pair satisfies the system x + y = 16 and 3x - y = 8? Possible pairs: (6, 10), (10, 6), (8, 8)	**(6, 10)**

PART 2 · APPLY IT

1. **(6, 4)** Test each pair in x + y = 10 and 4x + 6y = 48. Only (6, 4) makes both equations true.
2. **(8, 6)** Test each pair in x + y = 14 and 4x + 3y = 50. Only (8, 6) gives both the correct number of games and tokens.

CHALLENGE

Only (10, 11). Each pair makes x + y = 21, but only (10, 11) also makes 3x - y = 19.

Accept an ordered pair only when substitution shows that both equations are true. Accept equivalent substitution work, as long as x and y match the quantities named in each context problem.