

READY-X

READY-X puzzles were created by Carole Greenes and Tanner Wolfram. The *MathLinks* team thanks the authors for permission to use them in this program.

READY-X is an algebraic reasoning puzzle that requires solving equations and systems of equations (formally or informally). They appear in the Review section of every other Grade 8 Student Packet.

- The board is a grid with 4 rows, 3 columns, and 12 spaces. Each space contains one of the letters: R, E, A, D, Y, X, with some letters repeated. Letter values are whole numbers from 1 through 10. Within the grid, the same letter represents the same number, and different letters represent different numbers. Letter values differ from puzzle to puzzle.
- At the end of each row and at the bottom of each column is the sum of the numbers in that row or column. Therefore, all rows and columns are addition equations.
- To complete the grid, determine the value of each letter using logic, equations, or systems of equations.

Why: READY-X puzzles develop logical, algebraic reasoning, and number sense. Working on these puzzles also provides a “need to know” for solving algebraic equations.

Prepare ahead: Try the puzzle before assigning it to gain insight into the strategies and struggles students may encounter. Think about good questions to ask to promote thinking as well.

Launch the activity: Use Puzzles I and II to help students gain confidence and establish norms for discussion.

- Print (or display) each puzzle one at a time.
- Give students time to work alone first.
- Encourage students to share strategies. Record solutions.
- Generalize strategies when appropriate.

Accountability/Follow-up:

- Ask students to create their own READY-X puzzles and exchange with peers.
- For more READY-X puzzles, go to “Carole’s Books” in the General Resources section of the *MathLinks* Teacher Portal. Forty puzzles with three different degrees of difficulty are available.

READY-X: PUZZLE I

1. Solve for the values of R, E, A, D, Y, X. Sums of rows and columns are indicated at the end of each row or column.

		COLUMNS			
		1	2	3	
ROWS	1	R	X	E	17
	2	D	X	D	13
	3	Y	X	A	17
	4	D	X	E	14
		22	12	27	

R = _____ E = _____ A = _____ D = _____ Y = _____ X = _____

Solutions to Puzzle I:

READY-X: Puzzle I

R = 8, E = 6, A = 10, D = 5, Y = 4, X = 3

READY-X: PUZZLE II

1. Solve for the values of R, E, A, D, Y, X. Sums of rows and columns are indicated at the end of each row or column.

		COLUMNS			
		1	2	3	
ROWS	1	Y	Y	R	12
	2	X	X	R	28
	3	D	D	D	9
	4	A	E	R	20
		20	28	27	

R = _____ E = _____ A = _____ D = _____ Y = _____ X = _____

Solutions to Puzzle II:

READY-X: Puzzle II
R = 8, E = 5, A = 7, D = 3, Y = 2, X = 10