

Using Shorthand Notation to Complete Number Puzzles

NCTM Standards 1, 2, 6, 7, 8, 9, 10

Find the missing numbers in these puzzles.

1

		A	B
Think of a number.	⊗		0
	⊗⊗..	52	2

2

		C	D
Think of a number.	⊗		6
	2 ⊗ + 26	40	

3

		E	F
Think of a number.	x		
	$3x + 6$	18	33

4

		G	H
Think of a number.	x		
	$4x + 7$	11	35

5

If x is:	then $30x + 75$ is:
10	375
20	
25	
35	

6

If:	then x is:
$2x + 10 = 50$	20
$x + 17 = 92$	
$10 + 13x = 23$	
$8x - 2 = 22$	

7 Choose the correct answer.

Johanna has 6 boxes of erasers and 3 loose erasers. She counted all of her erasers and found she had exactly enough to give 1 eraser to each of the 81 fourth graders in her school. Which equation can be used to figure out the number of erasers in a box?

A. $81 \div 3 = 6x$

C. $6x + 3 = 81$

B. $81 \times 3 = 6x$

D. $3x + 6 = 81$

- 8 Use the clues in the table to find the missing parts of the puzzle. You do not need to fill in the **Words** column.

Words	Shorthand	A	B	C	D	E
Think of a number.	x		0			
		12	0	30		75
	$3x + 6$	18	6	36		
			6	26	16	56
Divide by 2						
Subtract the number you thought of first.	3					

- 9 Describe how you found the shorthand notation for the second row of the above puzzle.

- 10 **Challenge** Rosie brought 2 boxes of tissues and 1 pocket pack of tissues for her class to use. There are 12 tissues in the pocket pack. Rosie announced that she had brought 212 tissues. Which of the following describe this situation?

A. $212 - 2x = 200$

C. $x + 212 = 412$

B. $2x + 12 = 212$

D. $2x - 12 = 212$