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Mathematics Assistance Program/Tutorial Ministry Program Problems

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Activity 1

In 2005, a puzzle craze known as Sudoku swept across the world, starting in newspapers. These puzzles are closely linked to a branch of mathematics known as **graph theory**. Sudoku involves putting numbers on a square grid, and its creators claimed that solving it needed just a logical mind – no mathematics required.

This large square is composed of four blocks, each of which has four smaller squares within. The blocks are framed by thicker lines. There are also four rows across and four columns down, so this setup is a four-by-four (4×4) puzzle. Draw this puzzle for yourself now.

Note: Although the answer is below. Do not look at it before you've tried to solve it yourself.
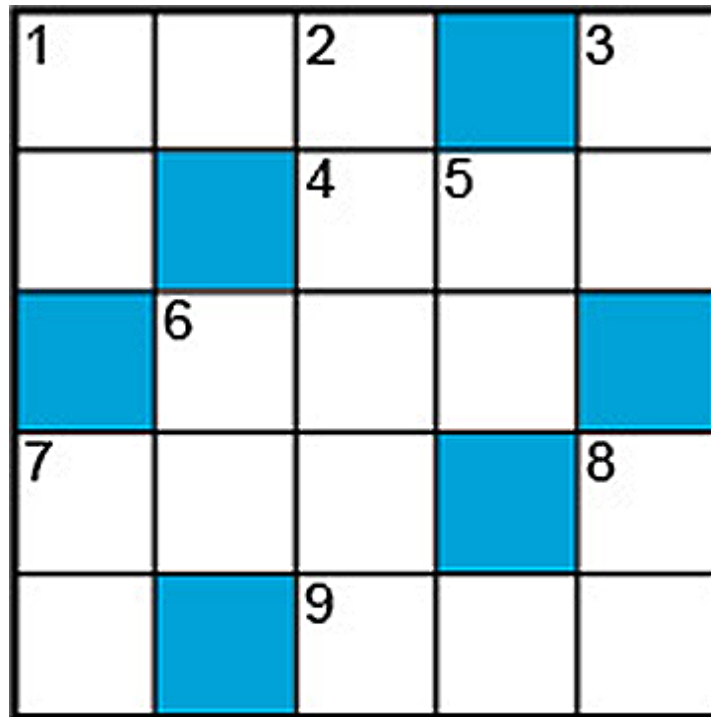
Allow approximately 10 minutes

Activity 2

Here's a cross-number puzzle to give you some more practice using your calculator. It's like a crossword puzzle, only with numbers instead of words.

Allow approximately 10 minutes

Across

1. 21×47

4. $1788 \div 6$

6. $497 - 105 + 12$

7. $1458 \div 3 \times 2$

9. $32 + 681 - 13$

Down

1. 19×5

2. 8003×3^2

3. $1234 - 1216$

5. $1^2 + 11 + 111 - 29$

6. $517 \div 11$

7. $21 \times 33 \div 7$

8. $49 + 49 - 48$

Activity 3

Working with Negatives

I have discovered that solving problems with negative numbers is an exercise that many people have difficulty with. Think of the negative numbers as money.

For example: 7 + (-13). If someone borrows 13 then pays you back 7, then how much do they still owe you? The solution is -6.

 Below are few exercises. Try to solve them.

Allow approximately 10 minutes

    a. 2 + (–5)

    b. (–4) – 3

    c. 8 – (–5)

    d. (–10) + (–2)

    e. (–3) + 3

Solutions:

Activity 1

Your grid should look like this.

2	1	3	4
4	3	2	1
3	4	1	2
1	2	4	3

Activity 2

Solution obtained from calculator.

Activity 3

Solution:

a. -3
b. -7
c. 13
d. -12
e. 0

Reference:

The Open University. (2019, October 31). *Succeed with Maths Part1*. Retrieved from Open Learn: https://www.open.edu/openlearn/ocw/mod/oucontent/view.php?id=18363&section=1.