Algebra Magic Explanation

Lesson 14 – Algebra Basics

Steps:

* Think of a number between 1 and 100.
* Multiply your number by 4.
* Add 12.
* Multiply this number by 2.
* Add 16.
* Divide this number by 8.
* Subtract your original number.
* YOUR NEW NUMBER IS 5

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| **Think of a number between 1 and 100.** | **Let's represent this number as n.** |
| **Multiply your number by 4.** | We can show this as 4n (4 times n). |
| **Add 12.** | 4n + 12 |
| **Multiply this number by 2.** | 2 (4n + 12) = 8n + 24  (using the Distributive Property) |
| **Add 16.** | (8n + 24) + 16 = 8n + (24 + 16) = 8n + 40 (using the Associative Property) |
| **Divide this number by 8.** | (8n+40)/8= 8n/8 + 40/8  = n + 5 |
| **Subtract your original number.** | n + 5 – n = 0 + 5  (using the Commutative and Associative Properties) |
| **Your number is 5!** | 0 + 5 = 5 |

EXPLANATION