

Nerdo the Mathnificant

Mind Your Symbology

Overview

This is a trick which is numeric in the process, but is solved algebraically. This works best as a class demonstration with a single student, but can be used with the entire class. Demonstrate the trick a few times for the class and then let students work in groups to figure out why it works,

Materials

Everyone (including yourself) should have a copy of the Mind Your Symbology handout. Paper for participant.

Steps

1. Instruct the student to pick a two-digit number.
2. Have student add the two digits together.
3. Student then subtracts the answer from the original number.
4. Direct the student to your choice of the four tables on the handout (A,B,C,D)
5. Have student find their final answer on the table you chose, and then draw it on a piece of paper. (Turn your back to the student while they do this.)
6. Student shows class what they have drawn, and then wads it up and throws it in the trash.
7. You can now draw the student's symbol on the board or overhead. (The symbol with any multiple of 9.)

Math

1. Let x = tens digit and y = ones digit, then $10x + y$ represents the original number
2. Adding the digits together is represented by $x + y$
3. Subtracting gets $10x + y - (x + y)$ or $9x$
4. This means that the answer the student gets will always be a multiple of 9.
5. All the multiples of 9 symbols are the same on each table.
6. Draw the symbol from the table you chose.

Example

1. 49
2. $4 + 9 = 13$
3. $49 - 13 = 36$

Mind Your Symbology

TABLE A

1 @	34 #	67 *
2 ^	35)	68 ?
3 &	36 <	69 +
4 @	37 !	70 ?
5 ?	38 *	71 \$
6 >	39 #	72 <
7 &	40 [	73 #
8 (	41 \$	74 *
9 <	42 >	75 =
10)	43 ~	76 +
11 @	44 &	77 *
12 ?	45 <	78 &
13 *	46 -	79 /
14 [	47 }	80 >
15 +	48 #	81 <
16 =	49 ?	82 &
17 \$	50 [	83 \$
18 <	51 =	84)
19 -	52 *	85 %
20 {	53 &	86 #
21 >	54 <	87 *
22 @	55 ?	88 +
23 ^	56 =	89 !
24)	57 *	90 <
25 >	58 ?	91 #
26 ~	59 (	92 -
27 <	60 %	93 @
28 ?	61 ~	94 +
29 %	62 *	95 >
30 >	63 <	96 =
31 +	64 #	97 “
32 &	65 -	98 @
33 -	66]	99 +

TABLE B

1 *	34 \$	67 &
2 <	35 !	68 }
3 +	36 %	69 *
4 ~	37 ^	70)
5 *	38 (	71 =
6 -	39 +	72 %
7 /	40 @	73 “
8 <	41 \$	74 &
9 %	42 !	75 #
10 \$	43 -	76 +
11)	44 >	77 /
12 @	45 %	78 -
13 &	46 *	79 +
14]	47 (	80 ~
15 !	48 \$	81 %
16 ^	49 =	82 *
17 <	50]	83 @
18 %	51 &	84 #
19 {	52 =	85 <
20 @	53 &	86 +
21 /	54 %	87 ~
22 *	55 -	88 <
23 “	56 \$	89 #
24 }	57 \$	90 %
25 =	58 @	91 ~
26 *	59 #	92 +
27 %	60 !	93 *
28 ?	61 &	94 -
29 ^	62 =	95 *
30 #	63 %	96 @
31 +	64 “	97 ?
32 &	65 (	98 }
33 &	66 ~	99 +

Mind Your Symbology

TABLE C

1 %	34 -	67 +
2 \	35 ?	68 %
3 *	36 \$	69 =
4 ~	37 -	70 }
5 [	38 *	71 %
6 @	39 ~	72 \$
7 >	40 (	73 +
8 *	41 <	74 &
9 \$	42 %	75 ~
10 #	43 “	76 -
11 ?	44 %	77 {
12 ~	45 \$	78 ?
13 +	46 =	79 ~
14 ~	47 &	80 *
15 >	48 %	81 \$
16 ?	49 -	82 ^
17 >	50 *	83)
18 \$	51 ~	84 &
19 ?	52 “	85 =
20 &	53 *	86 -
21 (	54 \$	87 +
22 -	55 ?	88 ^
23 [	56 +	89 *
24 &	57 =	90 \$
25 +	58 #	91 !
26 <	59 *	92 #
27 \$	60 “	93 -
28 ?	61 =	94 %
29 ^	62 *	95 #
30 <	63 \$	96)
31 ?	64 *	97 +
32 @	65 ^	98 -
33)	66 %	99 #

TABLE D

1)	34 *	67 #
2 =	35 /	68 \$
3 #	36 ?	69 !
4 +	37 “	70 %
5 #	38]	71 &
6 -	39 *	72 ?
7 *	40 <	73 /
8 +	41 &	74 ^
9 ?	42 >	75 =
10 @	43 \$	76 /
11 %	44 #	77 !
12 -	45 ?	78 ^
13 *	46)	79 @
14 (	47 ^	80 <
15 @	48 #	81 ?
16 \$	49 *	82 <
17 &	50 \$	83 -
18 ?	51 +	84 #
19)	52 /	85 ^
20 =	53 *	86 &
21 %	54 ?	87 %
22 #	55]	88 @
23 %	56 ^	89 -
24 *	57 &	90 ?
25 ~	58 =	91 >
26 ^	59 <	92 ^
27 ?	60 /	93 \$
28 +	61 <	94 %
29 -	62 *	95 +
30 &	63 ?	96 ~
31 \$	64 ^	97 “
32 #	65 @	98 >
33 *	66 >	99 %

