

Number magic

by Manjil Saikia - Monday, February 27, 2012

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Recently I found all the 22 existing ways to put 0 to 9 in the equation of a product such that each number occurs exactly once. And here they are:

$$5694 \times 3 = 17082$$

$$6819 \times 3 = 20457$$

$$6918 \times 3 = 20754$$

$$8169 \times 3 = 24507$$

$$9168 \times 3 = 27504$$

$$3907 \times 4 = 15628$$

$$7039 \times 4 = 28156$$

$$9127 \times 4 = 36508$$

$$5817 \times 6 = 34902$$

$$3094 \times 7 = 21658$$

$$4093 \times 7 = 28651$$

$$9304 \times 7 = 65128$$

$$9403 \times 7 = 65821$$

$$594 \times 27 = 16038$$

$$495 \times 36 = 17820$$

$$402 \times 39 = 15678$$

$$396 \times 45 = 17820$$

$$715 \times 46 = 32890$$

$$367 \times 52 = 19084$$

$$297 \times 54 = 16038$$

$$927 \times 63 = 58401$$

$$345 \times 78 = 26910$$

Also, as an extension, did the same after excluding zero:

$$1738 \times 4 = 6952$$

$$1963 \times 4 = 7852$$

$$483 \times 12 = 5796$$

$$297 \times 18 = 5346$$

$$198 \times 27 = 5346$$

$$157 \times 28 = 4396$$

$$186 \times 39 = 7254$$

$$138 \times 42 = 5796$$

$$159 \times 48 = 7632$$

(Dedicated to all my friends who happened to call me a numero-maniac...)

Went through all numbers till 99999999 to find these:

Squares of sums:

$$(20+25)^2=2025$$

$$(30+25)^2=3025$$

$$(494+209)^2=494209$$

$$(2450+2500)^2=24502500$$

$$(2550+2500)^2=25502500$$

$$(5288+1984)^2=52881984$$

$$(6048+1729)^2=60481729$$

Sums of squares:

$$12^2+33^2=1233$$

$$88^2+33^2=8833$$

$$990^2+100^2=990100$$

$$9412^2+2353^2=94122353$$

Syed Iddi Hasan

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