Number Oddities

The following numbers can be elegantly expressed as symmetrical equations using only the digits of the numbers :

369 = (3X69)+(36X9)—(3X6X9) 688 = (6X88)+(68X8)—(6X8X8) 639 = (6X39)+(63X9)—(6X3X9)

The following simple equations using three two-digit numbers remain still valid when multiplication signs are introduced between the digits of the numbers. Thus, 19+37=56 18+39=57 29+38=67)

and (1X9)+(3X7)=(5X6) (1X8)+(3X9)=(5X7) (2X9)+(3X8)=(6X7)

The simple equation $13^2=169$ is still valid when plus signs are introduced between the digits of 13 and 169, $(1+3)^2=1+6+9$ Here is a curious coincidence, $2^5X9^2=2592$

The square number 1089 can be expressed as the difference between the squares of two reversible numbers, $1089=65^2—56^2$

Interestingly, it can also be expressed as the difference between two squares in two more ways, $1089=55^2—44^2$ $1089=183^2—190^2$

The numbers 49 and 1680 are unique in that the addition of 1 to them as well to their halves renders them perfect squares. Thus, 48+1=49 48/2+1=25 1680+1=1681=41^2 1680/2+1=841=29^2

37 is the only two digit number which can be expressed as the difference between the sum of the squares of its digits and the product of its digits, $37=(3^2+7^2)—3X7$

The palindromes below can be expressed as the difference between the squares of two reversible numbers, $2772=96^2—68^2$ $5445=83^2—38^2$ $6336=80^2—08^2$

Below is an interesting oddity involving the square palindrome 69696. This palindrome can be expressed as the prodnct of two palindromes, namely, 69696=6336X11

The palindrome 6336 is interesting in that it can be represented by a palindromic expression, 6336=8X(63+36)X8

The square palindromes 121, 12321, 1234321, etc., are interesting. When plus signs are introduced between the digits of these numbers they still remain square, though no longer palindromic. Thus, 1+2+1=4 1+2+3+2+1=9 1+2+3+4+3+2+1=16.