Addition

commutative : order of addends don't matter

$7+3=3+7$

associative

$4+(2+3)=(4+2)+3$

grouping doesn't matter

identity

$20+0=20$

Multiplication

Commutative

$a \cdot b = b \cdot a$

identity

$a \times 1 = a$

zero

$a \cdot 0 = 0$

associative

$a \cdot (b \cdot c) = (a \cdot b) \cdot c$

Expanded Notation

digit × place value

75,000

$(7 \times 10{,}000) + (5 \times 1000)$

123,000

$(1 \times 100000) + (2 \times 10000) + (3 \times 1000)$

$y - 8860 = 6300$

minuend − subtrahend = difference

minuend = difference + subtrahend

subtrahend = minuend − difference

addend = sum − known addend

factor = product ÷ known factor

$12 + x = 16$

$x = 16 - 12$

$x = 4$

$4y = 24$

$y = 24 \div 4$

$y = 6$

dividend ÷ divisor = quotient

dividend = quotient × divisor

$x \div 5 = 7$

$x = 7 \times 5$

$x = 35$

divisor = dividend ÷ quotient

$$35 \div x = 7$$

$$x = 35 \div 7$$

$$x = 5$$