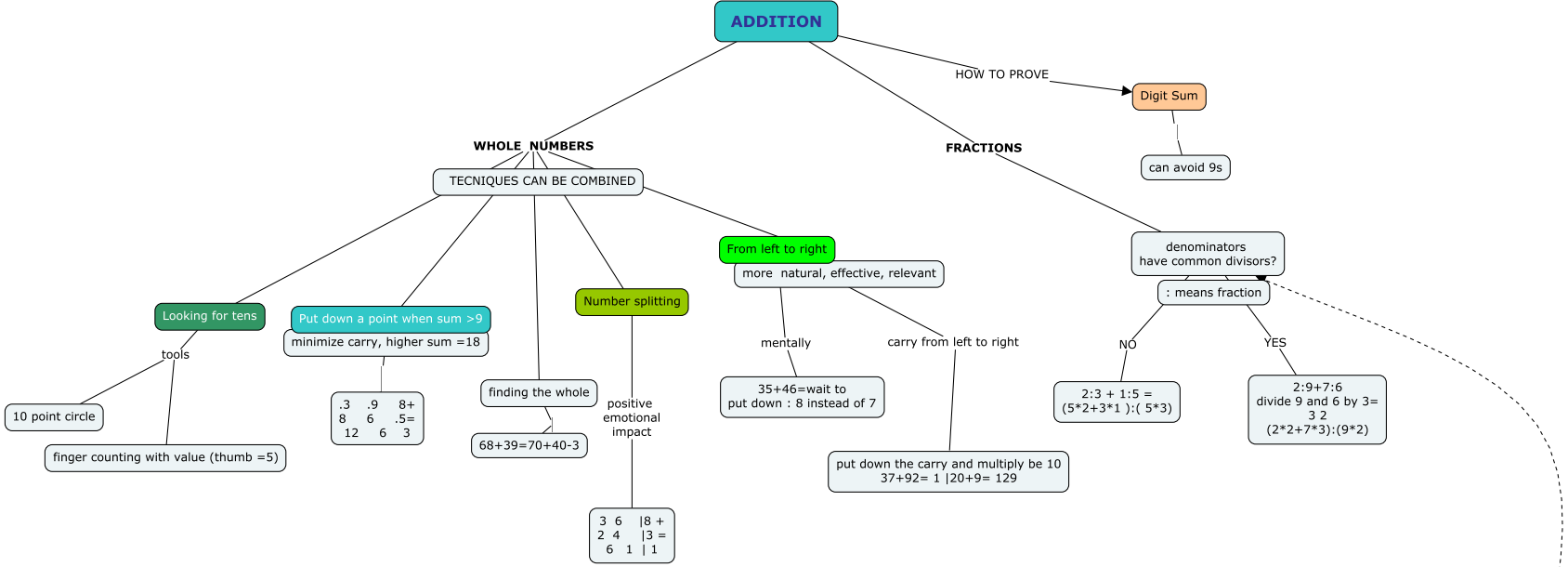
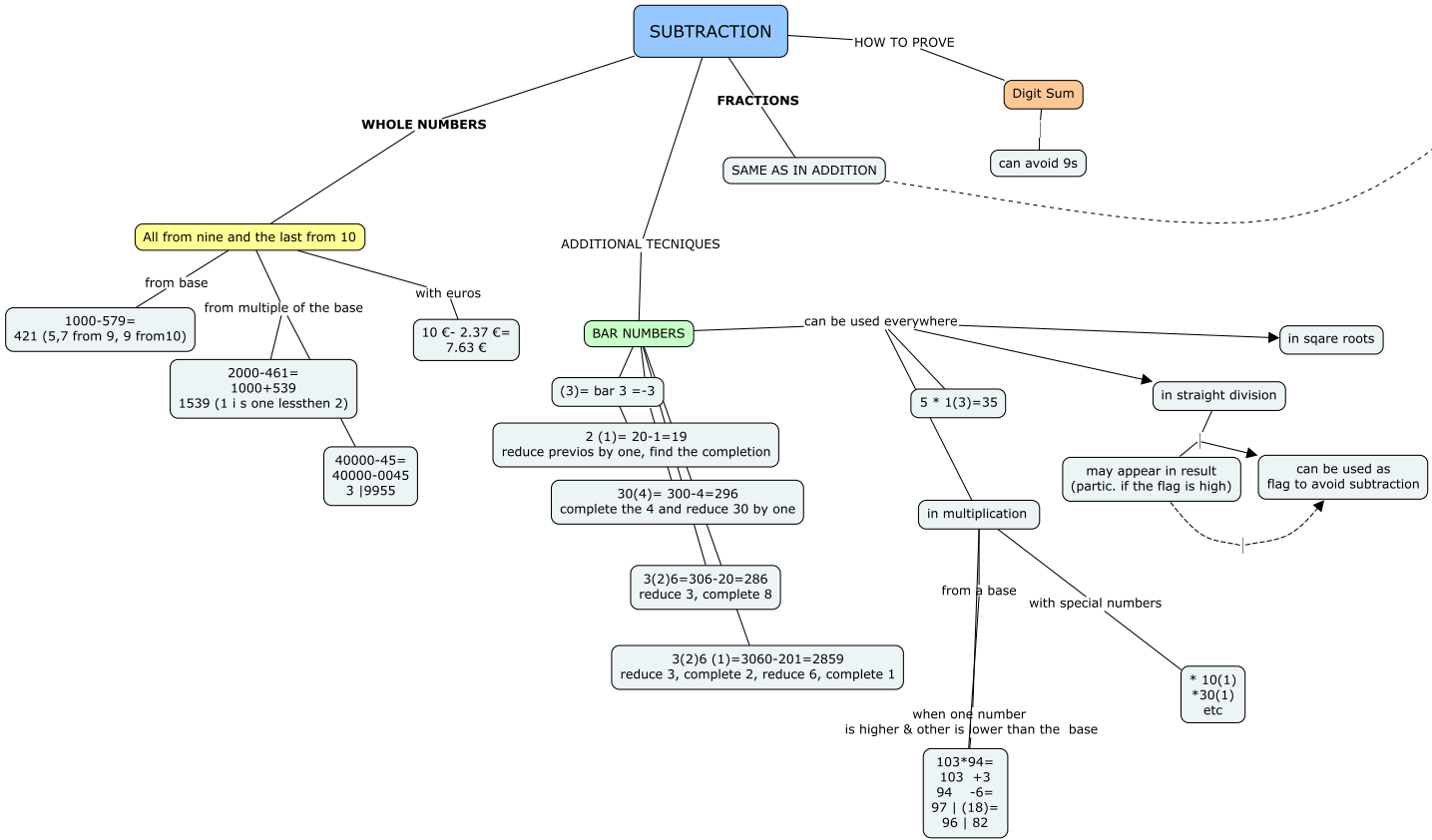

ADDITION
HOW TO PROVE
Digit Sum
can avoid 9s
WHOLE NUMBERS
FRACTIONS
TECNIQUES CAN BE COMBINED
Looking for tens
tools
10 point circle
finger counting with value (thumb =5)
Put down a point when sum >9
minimize carry, higher sum =18
.3 .9 8+
8 6 .5=
12 6 3
finding the whole
68+39=70+40-3
Number splitting
positive emotional impact
3 6 |8 +
2 4 |3 =
6 1 | 1
From left to right
more natural, effective, relevant
mentally
35+46=wait to put down : 8 instead of 7
carry from left to right
put down the carry and multiply be 10
37+92= 1 |20+9= 129
denominators have common divisors?
: means fraction
NO
2:3 + 1:5 = (5*2+3*1):(5*3)
YES
2:9+7:6
divide 9 and 6 by 3=
3 2
(2*2+7*3):(9*2)


SUBTRACTION
HOW TO PROVE
Digit Sum
can avoid 9s
WHOLE NUMBERS
FRACTIONS
SAME AS IN ADDITION
All from nine and the last from 10
from base
1000-579=
421 (5,7 from 9, 9 from10)
from multiple of the base
2000-461=
1000+539
1539 (1 i s one lessthen 2)
40000-45=
40000-0045
3 |9955
with euros
10 €- 2.37 €=
7.63 €
ADDITIONAL TECNIQUES
BAR NUMBERS
can be used everywhere
in sqare roots
(3)= bar 3 =-3
2 (1)= 20-1=19
reduce previos by one, find the completion
30(4)= 300-4=296
complete the 4 and reduce 30 by one
3(2)6=306-20=286
reduce 3, complete 8
3(2)6 (1)=3060-201=2859
reduce 3, complete 2, reduce 6, complete 1
5 * 1(3)=35
in straight division
may appear in result
(partic. if the flag is high)
can be used as
flag to avoid subtraction
in multiplication
from a base
with special numbers
* 10(1)
*30(1)
etc
when one number
is higher & other is lower than the base
103*94=
103 +3
94 -6=
97 | (18)=
96 | 82