

Mathematics in your head – addition and subtraction

1. Fundamentals: mental addition, subtraction

Addition:

$$42 + 3 = 45$$

$$46 + 7 = \text{since } 6 + 7 \text{ is } 13, \text{ recognize that the result will be } 50 \text{ and } 3, 53.$$

Think from “left to right” and “hear the problem”

$$73 + 16 = 73 + 10 + 6 = 83 + 6 = 89$$

You try

$$46 + 23 =$$

$$62 + 33 =$$

More difficult

$$23 + 58 = 23 + 50 + 8 = 73 + 8 = 70 + 11 = 81$$

You try

$$48 + 37 =$$

$$84 + 87 =$$

$$65 + 16 =$$

$$76 + 82 =$$

$$89 + 53 =$$

2. Adding three digit numbers.

$$400 + 567 = 400 + 500 + 67 = 900 + 67 = 967$$

$$450 + 320 = 450 + 300 + 20 = 750 + 20 = 770$$

You try

$$410 + 360 =$$

$$770 + 560 =$$

$$314 + 159 = 314 + 100 + 59 = 414 + 59 = 414 + 50 + 9 = 464 + 9 = 473$$

$$766 + 489 = 766 + 400 + 89 = 1166 + 80 + 9 = 1246 + 9 = 1255$$

Another way:

$$766 + 489 = 766 + 500 - 11 = 1266 - 11 = 1255$$

(usually easier if there is many carries)

3. Subtraction.

$$93 - 41 = 93 - 40 - 1 = 53 - 1 = 52$$

$$74 - 29 = 74 - 20 - 9 = 54 - 9 = 40 + 14 - 9 = 40 + 5 = 45$$

Another way:

$$74 - 29 = 74 - 30 + 1 = 44 + 1 = 45$$

You try

$$82 - 48 =$$

$$121 - 57 =$$

Three digit numbers

$$846 - 225 = 846 - 25 = 600 + 20 + 1 = 621$$

$$835 - 497 = 835 - 500 + 3 = 335 + 3 = 338$$

$$835 - 417 = 835 - 400 - 17 = 435 - 20 + 3 = 415 + 3 = 418$$

Finding a complement:

75	49	67	32	80
25	51			
100	100	100	100	100

First digits add up to 9, second digits add up to 10, except if the number ends with zero.

$$835 - 467 = 835 - 500 + 33 = 335 + 33 = 368$$

You try

$$621 - 274 =$$

$$729 - 256 =$$

$$1234 - 567 =$$

Finding a complement:

675 849 767 232 870
325 151
1000 1000_ 1000 1000 1000

What is the pattern?

If an item costs \$8.35 and you pay with a \$10 bill, what will be the change?

What's the change for \$23.58 if you pay with a \$100 bill?

If an item costs \$13.35 and you pay with a \$20 bill, what will be the change?

If an item costs \$7.35 and you pay with a \$20 bill, what will be the change?

4. Four digit numbers

Difficult to even remember the problem, unless we need to memorize up to 6 digits:

$$1234 + 6000 = 7234$$

$$1200 + 180 = 1380$$

You try

$$3500 + 2000 =$$

$$4500 + 250 =$$