Four-Digit Numbers and Place Value

Let's look at the number 2467 in detail.

The 2, 4, 6, and 7 are called the *digits* of the number.

Each digit has its own **place** (location) in the number:

thou-sands	hund-reds	tens	ones
2	4	6	7

$$2000 + 400 + 60 + 7$$

- 2 is in the thousands place,
- 4 is in the hundreds place,
- 6 is in the tens place, and
- 7 is in the ones (units) place.

Each digit also has a different **value** in the number.

- The value of digit 2 in this number is 2000.
- The value of the digit 4 is 400.
- The value of the digit 6 is 60.
- The value of the digit 7 is just 7.

So, each digit of a number has both a specific place and a specific value. That is why the way we write numbers is called a **place value system**.

The number 2467 is actually the sum (addition) of the values of the digits: it equals 2000 + 400 + 60 + 7.

Examples. Here, each number is written as a sum, according to the places and values of its digits. It is like writing each number out in full, using its parts: the thousands, the hundreds, the tens, and the ones. **Note!** When there are *no* hundreds, tens, or ones, we **write a zero**.

thou-sands	hund-reds	tens	ones
1	0	9	0

$$1000 + 0 + 90 + 0$$

thou-sands	hund-reds	tens	ones
5	6	0	2

$$5000 + 600 + 0 + 2$$

1. Fill in the blanks.

thou-sands	hund-reds	tens	ones
5	2	5	9

a. 5,000 + _____ + 50 + _____

thou-sands	hund-reds	tens	ones
7	0	8	2

b. 7,000 + 0 + _____ + _____

2. Fill in the blanks, and write each number <u>as a sum</u> of the values of its digits.

a.

thou- sands	hund reds	tens	ones
1	0	3	4

= ___*1000*___ + ___*0*___ + ___*3 0*___ + ___*4*___

b.

thou- sands	hund reds	tens	ones
5	6	7	0

= _____ + _____ + _____ + _____

c.

Th	H	T	O
3	5	0	8

= _____ + _____ + _____ + _____

d. 8,389   = _____ + _____ + _____ + _____

e. 9,007   = _____ + _____ + _____ + _____

f. 6,050   = _____ + _____ + _____ + _____

g. 216   = _____ + _____ + _____ + _____

3. Fill in.

a. Five thousand nine hundred ninety

Th	H	T	O

b. Six thousand sixteen

Th	H	T	O

c. Six thousand three hundred three

Th	H	T	O

d. Eight thousand seven hundred

Th	H	T	O

e. Nine thousand two hundred forty-five

Th	H	T	O

f. Ten thousand

ten thou- sands	Th	H	T	O
1	0	0	0	0

4. These numbers are written as sums. Write them in the normal way.

a. $2000 + 90 = $ _____
 	
  $3000 + 200 = $ _____
	b. $8000 + 5 = $ _____
	
	  $1000 + 80 + 7 = $ _____

c. $8000 + 200 + 20 = $ _____
 	
  $2000 + 500 + 90 + 8 = $ _____
	d. $4000 + 50 = $ _____
	
	  $2000 + 800 + 7 = $ _____

5. What part of these numbers is missing?

a. $5000 + 80 + $ _____ $= 5,083$	**b.** $7000 + $ _____ $+ 5 = 7,605$
c. _____ $+ 3000 = 3,050$	**d.** _____ $+ 700 + 1 = 2,701$

6. Write the numbers immediately after and before the given number.

a. _____ $6,049$ _____   **b.** _____ $2,324$ _____

c. _____ $1,800$ _____   **d.** _____ $8,809$ _____

e. _____ $7,385$ _____   **f.** _____ $9,244$ _____

7. These numbers are written as sums in a scrambled order! Write them as normal numbers.

a. 8 hundreds 7 thousands 8 ones
 	
  = _____
	b. 5 hundreds 9 thousands
	
	  = _____

c. 4 ones 3 thousands = _____	**d.** 5 thousands 6 tens = _____
e. $4,000 + 900 + 7 = $ _____	**f.** $80 + 8,000 + 6 = $ _____
g. $7 + 2,000 + 40 = $ _____	**h.** $20 + 600 + 4,000 = $ _____

8. What part of these numbers is missing?

a. $900 + 2 +$ _____ $= 8902$	**b.** $5000 + 40 +$ _____ $= 5046$
c. _____ $+ 6000 + 40 = 6540$	**d.** _____ $+ 4000 + 300 = 4340$
e. $5 +$ _____ $+ 8000 = 8205$	**f.** $80 +$ _____ $+ 9 = 7089$

9. This number line has tick-marks for every 10. Write the numbers marked by the dots.

a.   **b.**   **c.**   **d.**

2,400   2,450   2,500
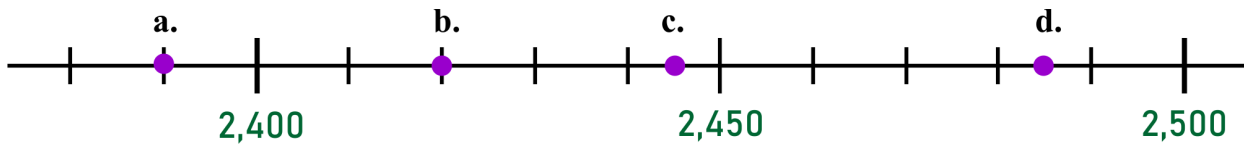
a. _____   **b.** _____   **c.** _____   **d.** _____

10. Mark the numbers on the number line (approximately):
8,870   8,821   8,895   8,795   8,834

8,800   8,850   8,900
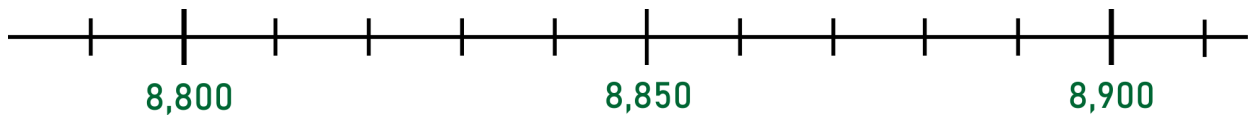
11. This number line goes from 9,000 to 10,000 (ten thousand). The tick marks are at every hundred now (not at every ten). Write the numbers marked by the dots.

a.   **b.**   **c.**   **d.**

9,000   10,000
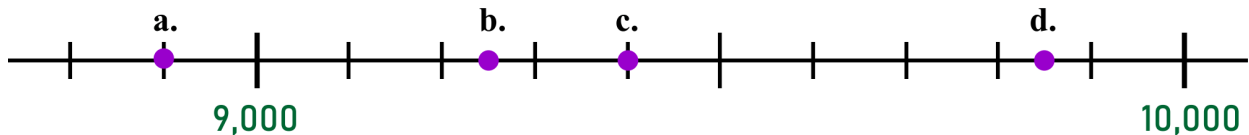
a. _____   **b.** _____   **c.** _____   **d.** _____

12. Place the following numbers (approximately) on the number line:

8100 7990 8240 8570 7750

8,000   8,500

13. Connect each number inside the puzzle to its thousands, hundreds, tens, and ones
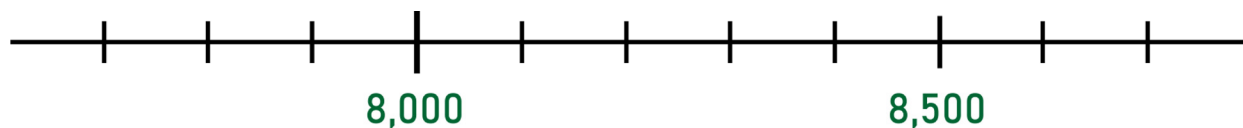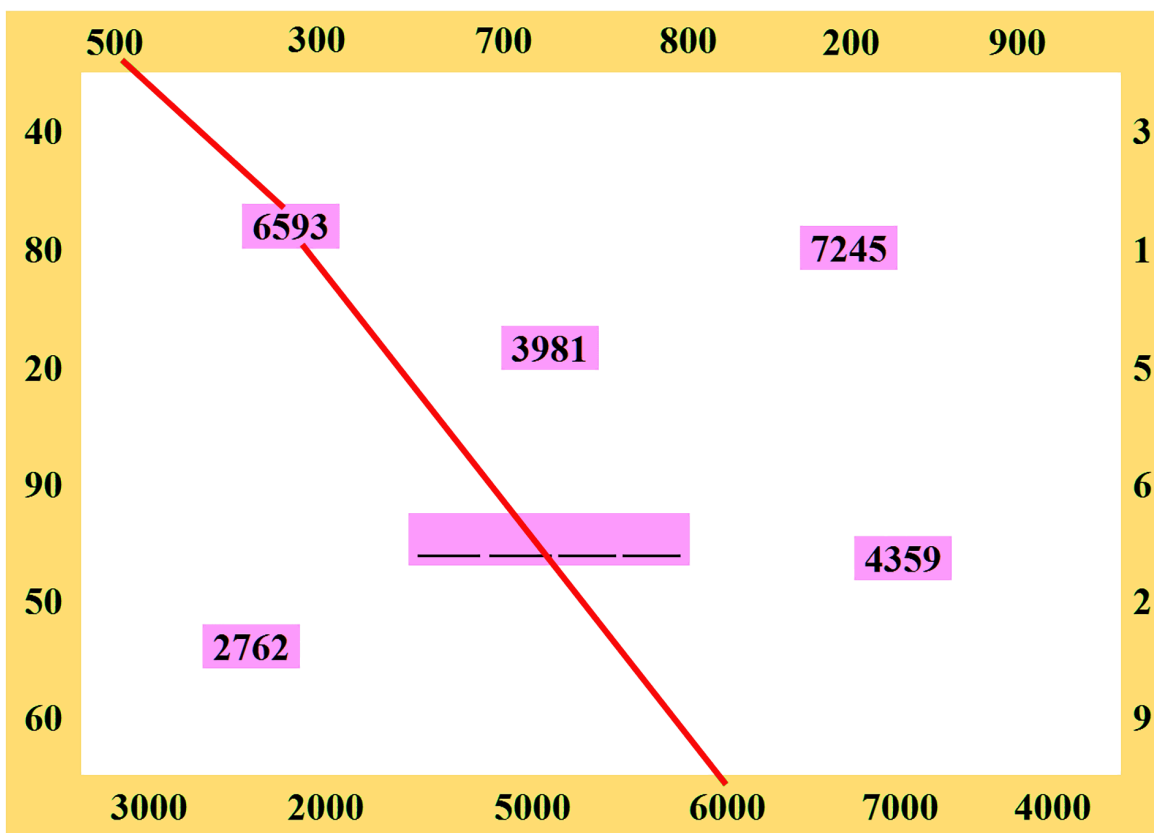that it contains. For example, 6,593 is connected to 6,000 and to 500 (for starters).
Add the unused numbers from the border to form the missing number inside.

| 500 | 300 | 700 | 800 | 200 | 900 |

40   3

6593   **7245**   1

80

3981

20   5

90   6

____ ____ ____ ____

4359

50   2

2762

60   9

| 3000 | 2000 | 5000 | 6000 | 7000 | 4000 |

Puzzle Corner   Place the digits 1, 2, 5, 6, and 8 into the boxes
so that the number sentences become true.

☐ × ☐ + ☐ ☐ ☐ = 569   ☐ ☐ × ☐ + ☐ × ☐ = 112