

Big Numbers & Addition

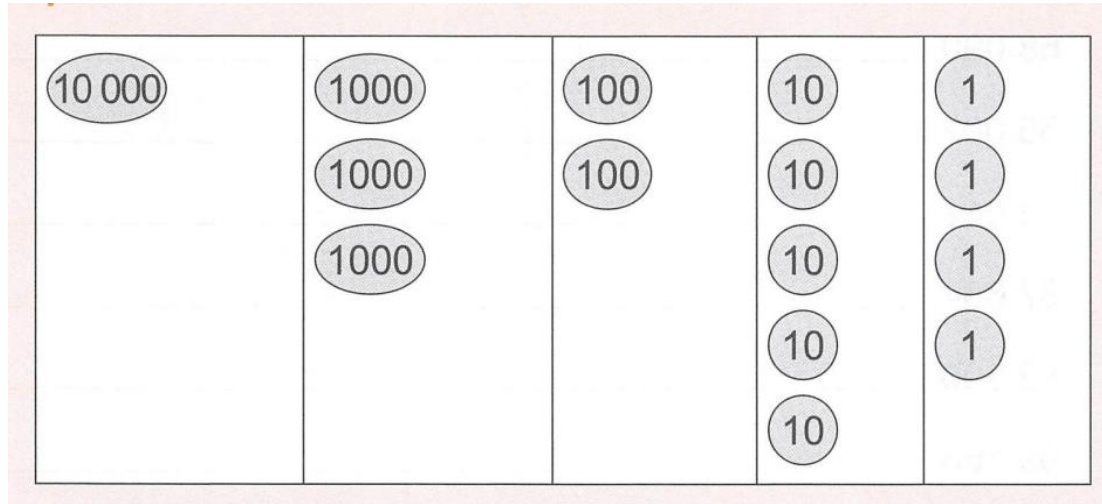
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Place Value

Place value is a system in mathematics that **determines the value of a digit based on its position** in a number. Each position in a number has a different value, which is **a power of 10**.

- The rightmost digit is in the **ones** place.
 - The next digit to the left is in the **tens** place.
 - The next digit to the left is in the **hundreds** place.
 - The next digit to the left is in the **thousands** place.
 - The next digit to the left is in the **ten thousands** place.
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Practice



Ten thousands	Thousands	Hundreds	Tens	Ones
1	3	2	5	4

The value of the digit 1 is 10 000.

The value of the digit 3 is 3000.

The value of the digit 2 is 200.

The value of the digit 5 is 50.

The value of the digit 4 is 4.

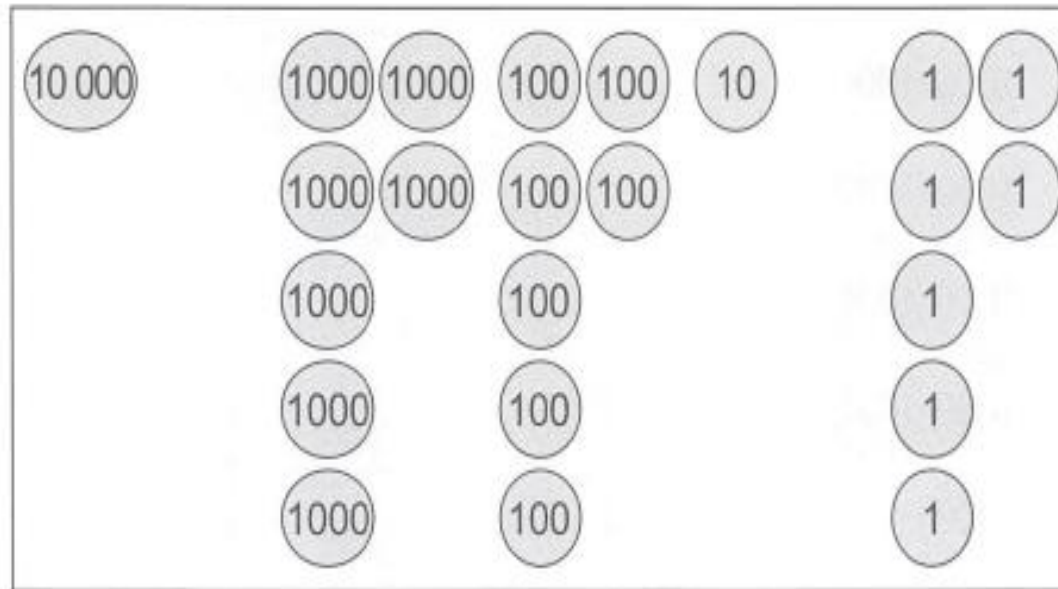
Write the numbers on the line provided

10 000	1000 1000	100 100	10	1
10 000	1000	100	10	
10 000	1000	100	10	
	1000	100		
	1000	100		

$$30\ 000 + 6000 + 600 + 30 + 1 = \underline{36\ 631}$$

30 000, 6000, 600, 30 and 1 make 36 631.

Write the number



17717

Example

Write 72948 in words

Seventy-two thousand, nine hundred and forty-eight

Practice

Write the following numbers in in words

71447

seventy-one thousand four hundred forty-seven

26212

twenty-six thousand two hundred twelve

99166

ninety-nine thousand one hundred sixty-six

There is a five-digit number. The digit in the lowest place is 6, and the digit in the highest place is 5. The digit in the ones place is twice the digit in the tens place. The sum of the first three digits and the sum of the last three digits are both 16. What is this five-digit number?

The five-digit number can be represented as $ABCDE$

The digit in the lowest place (E) is 6.

The digit in the highest place (A) is 5.

$$D = 6 \div 2 = 3$$

$$C = 16 - D - E = 16 - 3 - 6 = 7$$

$$B = 16 - A - C = 16 - 5 - 7 = 4$$

The five-digit number is 54736

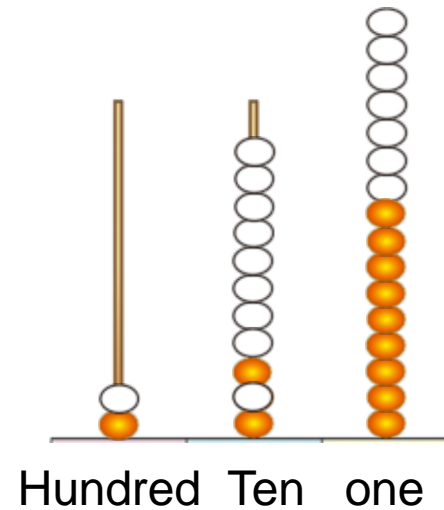
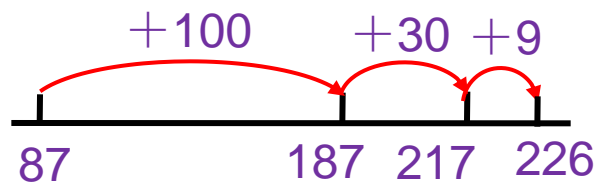
Traditional Way

$$\boxed{87} + \boxed{139} = \boxed{226}$$

$$87 + 100 = 187$$

$$187 + 30 = 217$$

$$217 + 9 = 226$$



$$\begin{array}{r} 87 \\ + 139 \\ \hline 226 \end{array}$$

Mental Math

$$87+139= 226$$

$$80+130=210$$

$$7+9=16$$

$$210+16$$

$$=210+10+6$$

$$=220+6$$

$$=226$$

From left to right, higher place value to lower place value .

Mental Math

$$87+139= 226$$

$$\begin{aligned}87+139 &= 87-1+139+1 \\ &= 86+140 \\ &= 226\end{aligned}$$

Practice

$$268 + 89 = 357$$

$$304 + 197 = 511$$

$$686 + 235 = 921$$

$$735 + 368 = 1103$$

$$942 + 534 = 1476$$

Traditional Way

$$5559 + 1155 = 6714$$

$$5559 + 1000 = 6559$$

$$6559 + 100 = 6659$$

$$6659 + 50 = 6709$$

$$6709 + 5 = 6714$$

$$\begin{array}{r} 5559 \\ + 1155 \\ \hline 6714 \end{array}$$

Mental Math

$$5559+1155= 6714$$

$$5500+1100=6600$$

$$55+59=114$$

$$\begin{aligned} 6600+114 \\ =6714 \end{aligned}$$

From left to right, higher place value to lower place value .

Practice

$$4237 + 6182 = 10419$$

Practice

$$7004 + 2498 = 9502$$

Practice

$$8161 + 1827 = 9988$$

Practice

$$1519 + 2740 = 4259$$

Practice

$$5268 + 4225 = 9493$$

Practice

$$8157 + 1462 = 9619$$

Mia throws darts at balloons worth 3,9,13,14 and 18. She scores 30 points in total. Which balloon does Mia definitely hit ?



The score of 30 points can be obtained in two different ways:

$$3+9+18$$

$$3+13+14$$

Mia definitely hits 3.

Challenge

$$\begin{aligned} &4201+2410+142+1024 \\ &=4000+200+1+2000+400+10+100+40+2+1000+20+4 \\ &=4444+2222+1111 \\ &=7777 \end{aligned}$$

Challenge

$$AAAA + BBBB + CCCC = ABBBC$$

$$\begin{array}{r} AAAA \\ + BBBB \\ + CCCC \\ \hline ABBBC \end{array}$$

$$A + B = 10$$

$$C + 1 = B$$

$$A = 1$$

$$A = 1 \quad B = 9 \quad C = 8$$

$$ABBC = 19998$$

