

Lesson 1 – Place Value (Integers)

Starter

- 1) What is the value of the 5 in the number 562?
- 2) What is the value of the 6 in the number 3265?
- 3) What is the value of the 7 in the number 7,324,098?
- 4) What is the value of the 8 in the number 4,567,089,362?

Starter Answers

- 1) Five hundred 2) six tens 3) three hundred thousand 4) Eighty thousand

First we will look at writing **integers** (whole numbers) using numerals.
We can use a **place value grid** to do this.

Billions			Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O	H	T	O

H = Hundreds
T = Tens
O = ones

What comes after billions?

1, 000, 000, 000 1 **billion**

1, 000, 000, 000, 000 1 **trillion**

1, 000, 000, 000, 000, 000 1 **quadrillion**

1, 000, 000, 000, 000, 000, 000 1 **quintillion**

Example 1

Write these numbers using numerals:

a) Three hundred thousand, two hundred and fifty four

Billions			Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O	H	T	O
						3	0	0	2	5	4

b) Forty two million, three hundred thousand and six

Billions			Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O	H	T	O
			4	2	3	0	0	0	0	0	6

You can see that forty two million would be 2 millions and 4 tens of millions.

Your go

Write each of these numbers using numerals

- a) Fifty three thousand, four hundred and seven
- b) Eight billion, forty five million, seven hundred thousand and sixty seven
- c) Six million and two
- d) Six million, three hundred thousand and thirty
- e) Seven quadrillion

Answers

- a) 53,407
- b) 8,045,700,067
- c) 6,000,002
- d) 6,300,030
- e) 7, 000, 000, 000, 000, 000

Example 2

Write these numbers using words

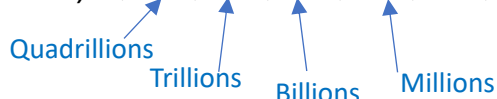
- a) 56,708,000 Fifty six million, seven hundred and eight thousand

Billions			Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O	H	T	O
				5	6	7	0	8	0	0	0

- b) 9,009,090,009 Nine billion, nine million, ninety thousand and nine

Billions			Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O	H	T	O
		9	0	0	9	0	9	0	0	0	9

- c) 6,000,000,000,000,000,000 Six quintillion



Your go

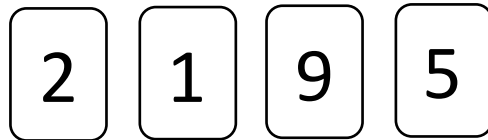
- 1) 42,000,000,000
- 2) 8,070,062
- 3) 7,070,007,777

Answers

- 1) Forty two billion
- 2) Eight million, seventy thousand and sixty two
- 3) Seven billion, seventy million, seven thousand, seven hundred and seventy seven

Example 3

Here are some number cards:



a) What is the largest three digit number you could make using each card only once?

We want the hundreds digit to be as big as possible so choose 9
We then want the tens to be the next biggest, so choose 5
Then we have 2 and 1 left to pick from for the units. We choose 2.

The number is 952

b) What is the smallest four digit number you could make using each card only once?

We want the thousands to be as small as possible, so choose 1
The hundreds need to be the next smallest value, so choose 2
We leave the 9 for the units as these have the smallest value

The number is 1259

c) What is the smallest **even** four digit number you could make using each card only once?

If the number is even, the 2 must be the units digit
The thousands digit needs to be as small as possible, so chose 1

The number is 1592

d) If you place one card in each of these spaces, what is the smallest sum you could make?

$$\square \square + \square \square$$

To get the smallest sum, you need to add the two biggest numbers you can make

Put the two biggest numbers in the tens spaces (i.e. 5 and 9)

The units can go either way around.

The smallest sum is: $52 + 91$