

# Math Study Guide for Quiz

## Lesson 1.1:

	<u>"10 times as much"</u>	<u>"1/10 of"</u>
300.	3,000.	30.
40.	400.	4.
0.25	2.5	0.025



Notice that the decimal point is simply moving to the right one place to make the number bigger "10 times as much" and it is moving to the left to make the number smaller "1/10 of"

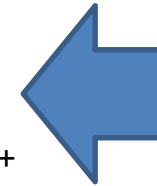
## Lesson 1.2: Three forms of a number

\* Standard form (number form)

\* Word form:

\* Expanded form:

345,128  
 three hundred forty-five thousand, one hundred twenty-eight  
 $(3 \times 100,000) + (4 \times 10,000) + (5 \times 1,000) + (1 \times 100) + (2 \times 10) + (8 \times 1)$



Remember the 3 forms. Never use the word "and" in word form. For expanded form you must multiply the digit by its value – and do that for each place.

## Lesson 1.2: Value of an underlined digit

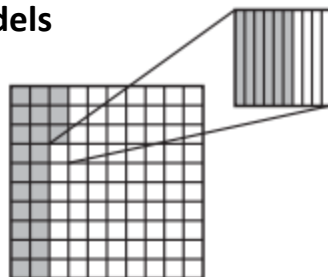
19,81      value = 80  
82,364      value = 80,000

Compare the values, the "8" in 82,364 is 1,000 times larger than the 8 in 19,81.



When comparing values, ask yourself, How many places over would I have to move the decimal? In this case, 3 places or by multiplying by 1,000.

## Lesson 3.1: Decimal Models showing Thousandths.



This model shows the decimal **0.236** which is read **two hundred thirty-six thousandths**.

Each square on this model is 0.01 (1/100). There are two full bars or 0.2 (two tenths), 3 squares or 0.03 (3 hundredths) and one square is magnified to show thousandths, there are 0.006 (6 thousandths).

### Lesson 3.1: Expanded Form of Decimals

2.587



Expanded form of decimals follows the same rules as expanded form for whole numbers - you must multiply the digit by its value – and do that for each place.

This example would be:  $(2 \times 1) + (5 \times 1/10) + (8 \times 1/100) + (7 \times 1/1,000)$

OR

$(2 \times 1) + (5 \times 0.1) + (8 \times 0.01) + (7 \times 0.001)$

### Lesson 3.1: Comparing Decimals (<, >, =)

Compare 23.456, 23.654, 23.645

23.456 (lowest)

23.654 (highest)

23.645



An easy way to compare decimals to see which one is the largest is to write them underneath each other, lining up the decimal points. Then starting from the left compare each digit in the same place. If the digits are the same move to the right until there is a difference; if there is no difference they are equal.

### Word Problems:

Gavin earned 40,000 bonus points on Prodigy. **This is 10 times as many** bonus points he earned last week. How many bonus points did he earn last week?

4,000

**True or False:**  $(7 \times 1/10) + (5 \times 1/100)$  is equivalent to seventy-five thousandths?

False, it is the expanded form of 0.75 or 75/100.

### Plotting Decimals on a Number Line:

The question below is asking you where on a number line would **6.225** (*six and two hundred twenty-five thousandths*) fall. Think about it.

There is **always an invisible zero to the right of every number**. So you can easily change any decimal in the hundredths to thousandths just by writing in the zero. For example 6.25 (*six and twenty-five hundredths*) would become 6.250 (*six and two hundred-fifty thousandths*).

So which pair of numbers would 6.225 fall in between?

D is the only one that makes sense because it would fall between 6.220 and 6.230.

You can also use a number line to prove it!

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Between which two numbers on a number line is 6.225 located?

- A 6.25 and 6.26
- B 6.24 and 6.25
- C 6.23 and 6.24
- D 6.22 and 6.23

