Mathematics

Student’s Name

Institution

**Other numbers system**

There are several number systems used in mathematics. The first number system is decimal numbers which is base 10 (ten), binary number system (base 2), the octal number system and the base 16, which is the hexadecimal number system. There are differences among the number system and the differences are based on the numbers and the figures added to the number. The decimal system is regarded as Hindu – Arabic system and it employs 10 (ten) as the base and it requires ten different numbers from 1 to 9. It has tenth as its base that the Roman or Egyptian number system does not have (Herd, 2013). Therefore, the difference between Roman and decimal number system is based on the number on the base. The decimal number is easily readable, easy to manipulate. However, its major drawback is that it wastes a lot of space and time.

**Multiplying Numbers**

A multiply number is a number which is multipliable with another number. The result of the multiplication number is called a product. There are two methods of multiplication, which are, Lattice Method and Russian Peasant method (Pariyani, 2014). Lattice method calculatesthe product by multiplying the top digit of the column. It can be taught quickly and it does not require any memorization. The lattice method takes less space and it is easy to typeset. It can also be performed using token. However, its drawbacks are long division, addition and multiplication. Lattice method is used sometimes for multiplication.An example of multiply numbers is 23X47 = 1081 (Olajide, 2015). And lattice method is illustrated as indicated on the box below:

**Alternate Number-Base Applications**

There are several significant aspects of using hexadecimal with computers. Firstly, it can represent 16-digit words and only 8 (eight) bit bytes. However, by using numeration by many symbols, it becomes much simpler to work with, by saving both space and paper (Fasteen, 2015). It becomes probable to understand some of its vast streams of data inside a computer. The system can be used in multiplication of two different numbers. It is also used in the set of digits and in the case where the base part iszero and when there is an absolute number base.

Fasteen, J. I. (2015). An Investigation of the Role of Alternate Numeration Systems in Preservice

Teacher Mathematics Content Courses. *Dissertations and Theses* , 2-35.

**Modulo Arithmetic and Number Base Conversions**

The relationship between modulo arithmetic and number base conversion is based on the non-negativenumber (Akhtaruzzaman, 2012). It is expressed based on value of ‘b’ and the unit value is the same to n, mode b,. Modulo arithmetic are performed in a positive integer and number base conversions is done in a negative integer.

**Using Abstract Thinking**

The abstract thinking is the idea of thinking about thinks which are removed from facts. It is referred to as the concept of being thought about (Fasteen, 2015). The three-dimension object and two-dimension can help in using the abstract of thinking. The idea is coiled from the aspect of freedom and is mostly from the psychological point of view. It is therefore, a non-mathematical aspect of addressing a specific problem.

**Amalie Noether and Abstract**

Amalie Noether and Abstract is a German mathematician who made a great contribution in the discovery of abstract algebra and several concepts of theoretical physics. He is the genius who discovered a new approach to physics (Olajide, 2015). Therefore, Amalie Noether is one of the brains behind the formation of theoretical physics and algebra in mathematics.

Herd, P. (2013). Imaginary Number Bases. *https://arxiv.org/pdf/1701.04506.pdf* , 2-35.

Olajide, A. O. (2015). Computer number System . *International Journal of Mathematics* , 2-35.

**Golden Ratio**

The golden ratio is when two quantities’ ratio is the same as the sum of the ratio. It is calculated by dividing the line into two parts (Akhtaruzzaman, 2012). It is used to analyze proportion and other related concepts.

Akhtaruzzaman, M. (2012). Golden Ratio, Golden Section, Golden Mean, Golden Spiral . *Internal Journal of Mathematics* , 2-34.

Pariyani, S. (2014). Why do we need various number base conversions (number system conversions), e.g octal to hexadecimal? *Journal of Mathematics and Business* , 2-35