Nickname: _____No._____M2/_____ Date:_____

Long Test 2 Before Midterm

Real Numbers

I. Multiple – choice: Read each statement carefully and write the letter of your answer on the space provided before each number.

___1. Which of this type of numbers are irrational nos.?

a. surds b. recurring decimals

c. terminating decimals d. integers

___2. Which of the following is not a rational number?

a. $0.0034267\ldots$ b. $\sqrt[3]{27}$

c. $\frac{1}{\sqrt{121}}$ d. $0.3\dot{1}\dot{2}$

___3. Which of the following is equal to $0.121212\ldots$?

a. $\frac{4}{33}$ b. $\frac{2}{15}$ c. $\frac{12}{100}$ d. $\frac{11}{90}$

___4. Which of the following is an example of a terminating decimal?

a. 0.1212 b. 0.12121...

c. 0.1234132... d. $0.\dot{1}\dot{2}$

___5. A number 0 is classified as...

a. whole, integer, rational, real

b. integer, rational, real

c. natural, integer, whole, rational, real

d. rational

___6. What is equivalent of $0.44444\ldots$ in fraction?

a. $\frac{4}{9}$ b. $\frac{44}{90}$ c. $\frac{2}{45}$ d. $\frac{40}{9}$

___7. Which of the following is an example of a surd?

a. $\sqrt{99}$ b. $2\sqrt{100}$ c. $\sqrt[3]{27}$ d. $\frac{1}{\sqrt{9}}$

___8. The value of $\frac{5}{12}$ in decimal is a type of .....

a. terminating decimal b. recurring decimal

c. non-recurring decimal d. all of the above

___9. What is equivalent of $\frac{1}{3}$?

a. 0.3 b. 0.3333

c. 0.3333... d. $0.\dot{3}\dot{0}$

___10. What is the place value of **6** in the number 0.006 ?

a. hundred b. hundredths

c. thousand d. thousandths

II. Solving Skills.

Solve and simplify each item. Show your solution, if possible.

A. Write the following decimals into a fraction form.

i. $0.232323\ldots$

ii. $0.32\dot{1}\dot{6}$

iii. $1.4\dot{8}$

iv. $2.45555\ldots$

v. $0.565656\ldots$

B. Evaluate and choose the best answer in its simplest radical form. Show your solutions.

i. $\sqrt{18} + \sqrt{8}$

a. $\sqrt{26}$ b. $5\sqrt{2}$ c. $6\sqrt{2}$ d. 12

ii. $\sqrt{49a^8}$

a. $7a$ b. $7a^2$ c. $7a^4$ d. $7a^8$

iii. $3\sqrt{24} \times 2\sqrt{32}$

a. $48\sqrt{3}$ b. $48\sqrt{2}$
c. $96\sqrt{6}$ d. $96\sqrt{3}$

iv. $\sqrt{2}(\sqrt{6} + \sqrt{7})$

a. $\sqrt{26}$ b. $\sqrt{48}$
c. $2\sqrt{3} + \sqrt{14}$ d. $2\sqrt{6} + 2\sqrt{7}$

v. $\sqrt[3]{8} \times 2(\sqrt[3]{16})$

a. 8 b. $8\sqrt[3]{2}$ c. $4\sqrt[3]{2}$ d. $2\sqrt[3]{48}$

vi. $\frac{\sqrt[3]{8}}{\sqrt[3]{125}}$

a. $\frac{8}{125}$ b. $\frac{2}{5}$ c. 10 d. $\frac{2\sqrt{2}}{5\sqrt{5}}$

vii. $\sqrt[3]{10^3} \times \sqrt{100}$

a. 10 b. 100 c. 1000 d. 10000

ix. (2pts.) Write $0.213333\ldots$ in fraction form using the long method.

Step 1: Let N =

Step 2:

Step3:

Step4:

$\therefore 0.213333\ldots =$ _____