

Name \_\_\_\_\_  
Mrs. Roumbos

Date \_\_\_\_\_  
8R Per \_\_\_\_\_

**The Number System Test**  
**Review**

**Matching:**

- |                       |     |  |
|-----------------------|-----|--|
| 1) Rational Numbers   | ___ | A. Non-terminating, non repeating decimals |
| 2) Integers           | ___ | B. Terminating or repeating decimals       |
| 3) Whole Numbers      | ___ | C. { 0, 1, 2, 3, ... }                     |
| 4) Irrational Numbers | ___ | D. { ... -3, -2, -1, 0, 1, 2, 3 ... }      |

**Fill Ins:**

- 5) \_\_\_\_\_ numbers are integers that are exactly divisible by 2.
- 6) \_\_\_\_\_ numbers are integers that have a remainder, 1, when divided by 2.
- 7) List the first 4 Perfect Squares: \_\_\_\_\_.

**State whether the numbers are Rational or Irrational and say why**

8)  $\frac{1}{2}$  \_\_\_\_\_

9)  $\pi$  \_\_\_\_\_

10)  $\sqrt{81}$  \_\_\_\_\_

11) .2334763... \_\_\_\_\_

12) .7 \_\_\_\_\_

13)  $\sqrt{10}$  \_\_\_\_\_

Convert the following fractions to decimals (use long division)

14)  $\frac{2}{3}$

15)  $\frac{3}{4}$

Convert the following decimals to fractions (in simplest form)

16) .7

17) .25

18) .88888 $\bar{8}$ ...

19) .343434 $\bar{34}$ ...

Simplify the following

20)  $4^2$

21)  $7^3$

22)  $6^2$

23)  $3^3$

24)  $\sqrt{49}$

25)  $-\sqrt{100}$

26)  $\sqrt[3]{8}$

27)  $\sqrt[3]{64}$

Compare the following using <, >, or = (nearest hundredth)

28)  $\sqrt{7}$  \_\_\_\_\_ 3

29)  $\frac{5}{2}$  \_\_\_\_\_  $\sqrt{5}$

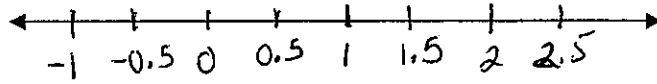
30) .35 \_\_\_\_\_  $\frac{7}{20}$

Order from least to greatest (nearest hundredth)

31)  $\sqrt{3}$ ,  $-\frac{7}{4}$ , 2.13 \_\_\_\_\_

Plot the set of numbers on a number line (nearest hundredth)

32)  $\sqrt{1}$ ,  $0.1$ ,  $-\frac{1}{10}$



The square root of the following number is between what 2 integers? Show work

33)  $\sqrt{8}$

34)  $\sqrt{90}$

The square root of the following number is between which 2 integers? Then tell me which integer it is closer to. (show work the long way)

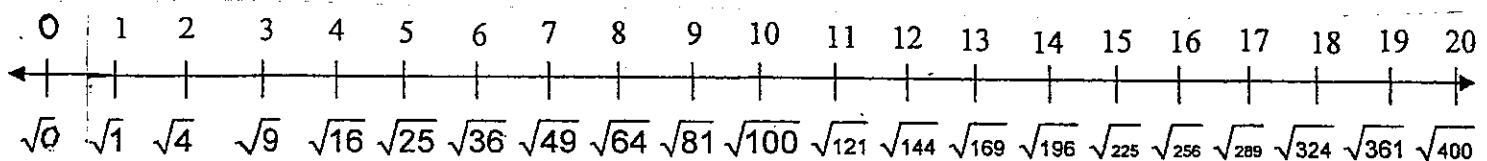
35)  $\sqrt{17}$

The square root of the following number is between which 2 integers? Then tell me which integer it is closer to. Then tell me what it is to the NEAREST TENTH! (show work the long way)

36)  $\sqrt{40}$

Estimate the following to the nearest hundredth. Show work

37)  $\sqrt{7} + \sqrt{3}$





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**The Number System Test**  
**Review**

Matching:

- |                       |          |  |
|-----------------------|----------|--|
| 1) Rational Numbers   | <u>B</u> | A. Non-terminating, non repeating decimals |
| 2) Integers           | <u>D</u> | B. Terminating or repeating decimals       |
| 3) Whole Numbers      | <u>C</u> | C. { 0, 1, 2, 3, ... }                     |
| 4) Irrational Numbers | <u>A</u> | D. { ... -3, -2, -1, 0, 1, 2, 3 ... }      |

Fill Ins:

- 5) Even numbers are integers that are exactly divisible by 2.
- 6) Odd numbers are integers that have a remainder, 1, when divided by 2.
- 7) List the first 4 Perfect Squares: { 0, 1, 4, 9 }  
0<sup>2</sup> 1<sup>2</sup> 2<sup>2</sup> 3<sup>2</sup>

State whether the numbers are Rational or Irrational and say why

8)  $\frac{1}{2}$  Rational  
(Fraction)

9)  $\pi$  Irrational (NON-terminating & NON-repeating decimal)

10)  $\sqrt{81} = 9$  Rational  
(Whole #)

11) 2.334763... Irrational (NON-terminating & NON-repeating decimal)

12) 7 Rational  
(Terminating decimal)

13)  $\sqrt{10} = 3.16227766...$  Irrational (NON-terminating & NON-repeating decimal)

Convert the following fractions to decimals (use long division)

14)  $\frac{2}{3}$

$\boxed{.6}$

$$\begin{array}{r} .66 \\ 3 \overline{) 2.000} \\ \underline{-18} \phantom{00} \\ 20 \phantom{0} \\ \underline{-18} \phantom{0} \\ 20 \\ \underline{-18} \\ 2 \end{array}$$

15)  $\frac{3}{4}$

$\boxed{.75}$

$$\begin{array}{r} .75 \\ 4 \overline{) 3.00} \\ \underline{-28} \phantom{0} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

\* DO  $\boxed{3} \div \boxed{4}$  on calc to check

Convert the following decimals to fractions (in simplest form)

16) .7

$\boxed{\frac{7}{10}}$

$\boxed{2nd}$  PRB

Simplify the following

17) .25

$\frac{25}{100} \stackrel{\div 25}{=} \frac{1}{4}$

\*  $\boxed{A\%}$  to reduce

18) .88888...

$\boxed{\frac{8}{9}}$

\* Repeating = 9's in the denominator

19) .34343434...

$\boxed{\frac{34}{99}}$

20)  $4^2 = \boxed{16}$

$\boxed{4} \boxed{\wedge} \boxed{2}$

21)  $7^3 = \boxed{343}$

$\boxed{7} \boxed{\wedge} \boxed{3}$

22)  $6^2 = \boxed{36}$

$\boxed{6} \boxed{\wedge} \boxed{2}$

23)  $3^3 = \boxed{27}$

$\boxed{3} \boxed{\wedge} \boxed{3}$

24)  $\sqrt{49} = \boxed{7}$

$\boxed{2nd}$   $\sqrt{\boxed{49}}$

25)  $-\sqrt{100} = \boxed{-10}$

$-1 \cdot \sqrt{100}$   
 $-1 \cdot 10$   
 $= \boxed{2nd} \sqrt{\boxed{100}}$

26)  $\sqrt[3]{8} = \boxed{2}$

$\boxed{3} \boxed{2nd} \sqrt{\boxed{8}}$

27)  $\sqrt[3]{64} = \boxed{4}$

$\boxed{3} \boxed{2nd} \sqrt{\boxed{64}}$

Compare the following using  $<$ ,  $>$ , or  $=$  (nearest hundred-th)

28)  $\sqrt{7} < 3$   
 $2.65 < 3.00$

29)  $\frac{5}{2} > \sqrt{5}$   
 $2.50 > 2.24$

30)  $.35 = \frac{7}{20}$   
 $.35 = .35$

Order from least to greatest (nearest hundred-th)

31)  $\sqrt{3}, -\frac{7}{4}, 2.13$

$-\frac{7}{4}, \sqrt{3}, 2.13$

$\sqrt{3} = 1.73$

$-\frac{7}{4} = -1.75$

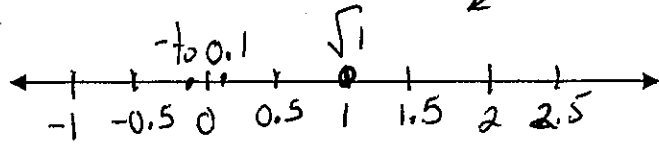
$2.13 = 2.13$

\* always write in original form

Plot the set of numbers on a number line (nearest hundredth)

always write in original form

32)  $\sqrt{1}, 0.1, -\frac{1}{10}$



$\sqrt{1} = 1.00$

$0.1 = .01$

$-\frac{1}{10} = -0.10$

The square root of the following number is between what 2 integers? Show work

33)  $\sqrt{8}$

$\sqrt{4} < \sqrt{8} < \sqrt{9}$

$2 < \sqrt{8} < 3$

$\sqrt{8}$  is between 2 + 3

34)  $\sqrt{90}$

$\sqrt{81} < \sqrt{90} < \sqrt{100}$

$9 < \sqrt{90} < 10$

$\sqrt{90}$  is between 9 + 10

The square root of the following number is between which 2 integers? Then tell me which integer it is closer to. (show work the long way)

35)  $\sqrt{17}$

$\sqrt{16} < \sqrt{17} < \sqrt{25}$

$4 < \sqrt{17} < 5$

17	25
$\frac{-16}{1}$	$\frac{-17}{8}$

$\sqrt{17}$  is between 4 + 5 and closer to 4

The square root of the following number is between which 2 integers? Then tell me which integer it is closer to. Then tell me what it is to the NEAREST TENTH! (show work the long way)

36)  $\sqrt{40}$

$\sqrt{36} < \sqrt{40} < \sqrt{49}$

$6 < \sqrt{40} < 7$

40	49
$\frac{-36}{4}$	$\frac{-40}{9}$

$\sqrt{40}$  is between 6 + 7 and closer to 6

$\sqrt{40} \approx 6.32455532...$

6.3

Estimate the following to the nearest hundredth. Show work

37)  $\sqrt{7} + \sqrt{3}$

$2.65 + 1.73 = 4.38$

or calc

