

Name _____

Date _____

Math 8R; _____

Period _____

Extra Review
Number Systems Test Review

Directions: Show all work where necessary. Please write your final answer on the available line.
For multiple choice questions, please write the CAPITAL letter of your choice.

1 - 6: Define each and/or give the set.

1. Rational Numbers _____
2. Integers _____
3. Whole Numbers _____
4. Irrational Numbers _____
5. Natural Numbers _____
6. Real Numbers _____

7. Which number is not real?

- A. $\frac{8}{0}$
 - B. 7π
 - C. $\sqrt{100}$
 - D. 0.121212....
- _____

8. Which fraction is equivalent to a repeating decimal?

- A. $\frac{1}{8}$
 - B. $\frac{721}{999}$
 - C. $\frac{1}{4}$
 - D. $\frac{71}{1000}$
- _____

9. What is the value of $\sqrt{900}$?

10. What is the value of $\sqrt[3]{343}$?

11. True or False. $\frac{4}{22}$ is an irrational number.

12. True or False.
The set of rational numbers is a subset of real numbers.

<p>13. Convert $\frac{7}{8}$ to a decimal by showing long division.</p> <p style="text-align: center;">$\frac{7}{8} = \underline{\hspace{2cm}}$</p>	<p>14. Convert 0.72 to a fraction in simplest form.</p> <p style="text-align: center;">$0.72 = \underline{\hspace{2cm}}$</p>
<p>15. Between which two whole numbers is $\sqrt{70}$.</p> <p style="text-align: center;">$\underline{\hspace{2cm}}$</p>	<p>16. Find the approximate value of $\sqrt{47}$ to the nearest whole number.</p> <p style="text-align: center;">$\sqrt{47} \approx \underline{\hspace{2cm}}$</p>
<p>17. Find the approximate value of $\sqrt{27}$ to the <u>nearest tenths</u> place. (You must show all work for credit.)</p> <p style="text-align: center;">$\sqrt{27} \approx \underline{\hspace{2cm}}$</p>	<p>18. Find the approximate value of $\sqrt{24} + \sqrt{64} + 2\pi$ to the nearest hundredths place.</p> <p style="text-align: center;">$\sqrt{24} + \sqrt{64} + 2\pi \approx \underline{\hspace{2cm}}$</p>
<p>19. Write <, >, or = between the two numbers.</p> <p style="text-align: center;">$5\frac{3}{4} \underline{\hspace{1cm}} \sqrt{30}$</p>	<p>20. Write <, >, or = between the two numbers.</p> <p style="text-align: center;">$\sqrt{91} \underline{\hspace{1cm}} \sqrt{75}$</p> <p style="text-align: right;">$\underline{\hspace{2cm}}$</p>

21. 19 is the square root of what number?

22. Find the value of $242 - 3.25(5)$.
(Don't forget the correct order of operations.)

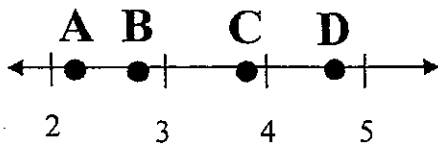
23. List the following numbers in order from least to greatest.

2.7, -1.8, -2, 0, $2\bar{6}$

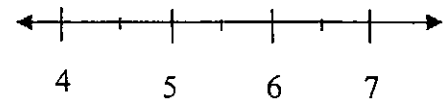
24. List the following numbers in order from least to greatest.

π , 3.14, $\sqrt{12}$, 3, 2.87

25. Which letter represents value of $\sqrt{8}$ on the number line below?



26. Place a point where $\sqrt{41}$ belongs on the number line below.



27. What is the next perfect square after 256?

28. Convert $0.824824\overline{824}$ to a fraction.

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Directions: Show all work where necessary. Please write your final answer on the available line.
 For multiple choice questions, please write the CAPITAL letter of your choice.

1 - 6: Define each and/or give the set.

- 1. Rational Numbers {The quotient of two integers}
- 2. Integers {... -3, -2, -1, 0, 1, 2, 3...}
- 3. Whole Numbers {0, 1, 2, 3...}
- 4. Irrational Numbers {Non-terminating and non-repeating decimals}
- 5. Natural Numbers {1, 2, 3, 4...}
- 6. Real Numbers {Union of Rational and Irrational numbers}

~~NOT real~~: Division by 0 + Negative square roots

7. Which number is not real?

A. $\frac{8}{0}$
 B. 7π
 C. $\sqrt{100}$
 D. 0.121212....

A

8. Which fraction is equivalent to a repeating decimal?

A. $\frac{1}{8}$
 B. $\frac{721}{999}$
 C. $\frac{1}{4}$
 D. $\frac{71}{1000}$

B

9. What is the value of $\sqrt{900}$?

2nd X² 900 30

10. What is the value of $\sqrt[3]{343}$?

3 2nd 343 7

11. True or False. $\frac{4}{22}$ is an irrational number.

False

B/c it is a fraction

12. True or False.
 The set of rational numbers is a subset of real numbers. Real

True

Rat

13. Convert $\frac{7}{8}$ to a decimal by showing long division.

$$\begin{array}{r} .875 \\ 8 \overline{) 7.000} \\ \underline{-64} \\ 60 \\ \underline{-56} \\ 40 \end{array}$$

$$\frac{7}{8} = \underline{.875}$$

14. Convert 0.72 to a fraction in simplest form.

$$\frac{72}{100} = \frac{18}{25}$$

$$0.72 = \underline{\frac{18}{25}}$$

15. Between which two whole numbers is $\sqrt{70}$.

$$\sqrt{64} < \sqrt{70} < \sqrt{81}$$

$$8 < \sqrt{70} < 9$$

$$\underline{8 \text{ and } 9}$$

16. Find the approximate value of $\sqrt{47}$ to the nearest whole number.

$$\sqrt{36} < \sqrt{47} < \sqrt{49} \quad \begin{array}{r} 47 \quad 49 \\ -36 \quad -49 \\ \hline 11 \quad -2 \end{array} \quad \sqrt{47} \approx \underline{7}$$

17. Find the approximate value of $\sqrt{27}$ to the nearest tenths place.
(You must show all work for credit.)

$$\sqrt{25} < \sqrt{27} < \sqrt{36}$$

$$5 < \sqrt{27} < 6$$

$$\begin{array}{r} 27 \quad 36 \\ -25 \quad -27 \\ \hline 2 \quad 9 \end{array}$$

$$\sqrt{27} \approx 5.196152423$$

$\sqrt{27}$ is between 5 and 6 and closer to 5

$$\sqrt{27} \approx \underline{5.2}$$

18. Find the approximate value of $\sqrt{24} + \sqrt{64} + 2\pi$ to the nearest hundredths place.

$$\sqrt{24} + \sqrt{64} + 2\pi$$

$$\sqrt{24} + 8.00 + 2\pi$$

$$4.90 + 8.00 + 6.28$$

A calculator
do
calc

$$\sqrt{24} + \sqrt{64} + 2\pi \approx \underline{19.18}$$

19. Write $<$, $>$, or $=$ between the two numbers.

$$5\frac{3}{4} > \sqrt{30}$$

$$5.75 > 5.48$$

$>$

20. Write $<$, $>$, or $=$ between the two numbers.

$$\sqrt{91} > \sqrt{75}$$

$$9.54 > 8.66$$

$>$

21. 19 is the square root of what number?

$$19^2 = 361$$

361

22. Find the value of $242 - 3.25(5)$.
(Don't forget the correct order of operations.)

$$242 - 3.25(5)$$
$$242 - 16.25$$
$$\underline{225.75}$$

23. List the following numbers in order from least to greatest.

2.7, -1.8, ~~2~~, 0, $2\bar{6}$

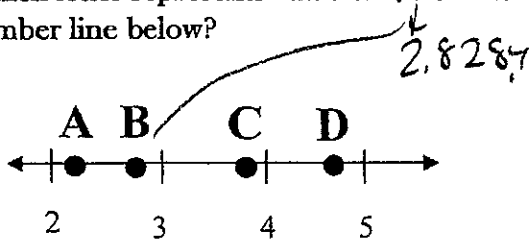
-2, -1.8, 0, $2\bar{6}$, 2.7

24. List the following numbers in order from least to greatest.

π , $3\sqrt{14}$, $\sqrt{12}$, ~~8~~, ~~2.87~~
3.1415... 3.464 3.00

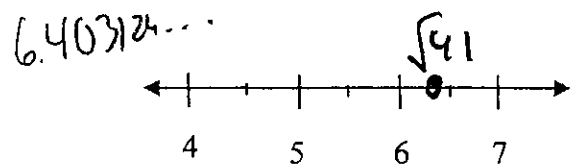
2.87, 3, 3.14, π , $\sqrt{12}$

25. Which letter represents value of $\sqrt{8}$ on the number line below?



B

26. Place a point where $\sqrt{41}$ belongs on the number line below.



27. What is the next perfect square after 256?

$$16^2 \quad 17^2 = 289$$

289

28. Convert $0.824824824\ldots$ to a fraction.

$$\frac{824}{999}$$