

CSS: Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them on a number line, and estimate the value of the expression.

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Per.: \_\_\_\_\_

### LT Pre Test

**Directions:** Show what you know about the following topic by completing the problems below. Make sure to show all work.

1. What does approximate mean in mathematics?

2. Draw a picture to represent the real-number system and give examples of each sub-group.

3. Define the following mathematical terms.

Square roots –

Perfect squares –

Cube roots –

Perfect cubes -

4. Circle the group with more.



(K.CC.6)

5. Which number is larger?



(K.CC.7)

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6. Give three statements comparing the size of a gallon of juice to a cup of juice.			(K.MD.2)
7. Use a $<$ , $>$ or $=$ symbol to compare the numbers below. a) 12    23 b) 15    50 c) 10    11	8. Use a $<$ , $>$ or $=$ symbol to compare the numbers below. a) 105    110 b) 333    336 c) 115    220		
(1.NBT.3)	(2.NBT.4)		
9. How do you know when two fractions are equivalent? Give an example of two equivalent fractions that are not identical.	10. Use $<$ , $>$ , or $=$ symbols to compare the fractions below.  a) $\frac{1}{2}$ $\frac{1}{3}$  b) $\frac{2}{3}$ $\frac{3}{4}$  c) $\frac{5}{8}$ $\frac{3}{4}$  d) $\frac{1}{10}$ $\frac{3}{16}$		
(3.NF.3)	(4.NF.2)		
11. Use $<$ , $>$ , or $=$ symbols to compare the numbers.  a) 123    1234 b) 345    3451 c) 654    62	12. Use $<$ , $>$ , or $=$ symbols to compare the numbers.  a) 12.02    12.12 b) 15.13    15.24 c) 0.1    0.13	13. Use $<$ , $>$ , or $=$ symbols to compare the numbers.  a) 1.456    1.232 b) 3.41    3.419 c) 4.89    4.142	
(4.NBT.2)	(4.NF.7)	(5.NBT.3)	
14. Write the expressions as a number.  a) $3.45 \times 10^2 =$ b) $452 \times 10^3 =$ c) $12.3 \times 10^{-1} =$	15. Place the numbers below in order from least to greatest.  $-3.4, 2.1,  -3 , 6.3,  2.14 , 1.5$	16. Explain what the statement below means in terms of the location of two numbers on a number line.  $-1.45 < -0.12$	
(5.NBT.2)	(6.NS.7)	(6.NS.7a)	

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17. Here are the low temperatures (in Celsius) for one week in Juneau, Alaska:

Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
5	-1	-6	-2	3	7	0

a. Arrange them in order from coldest to warmest temperature.

b. On a winter day, the low temperature in Anchorage was 23 degrees below zero (in  $^{\circ}\text{C}$ ) and the low temperature in Minneapolis was 14 degrees below zero (in  $^{\circ}\text{C}$ ). Sophia wrote,

**Minneapolis was colder because  $-14 < -23$ .**

Is Sophia correct? Explain your answer.

c. The lowest temperature ever recorded on earth was  $-89^{\circ}\text{C}$  in Antarctica. The average temperature on Mars is about  $-55^{\circ}\text{C}$ . Which is warmer, the coldest temperature on earth or the average temperature on Mars? Write an inequality to support your answer.

(6.NS.7b)

18. Find the absolute values of the numbers below.

- a)  $|-2| =$
- b)  $|5| =$
- c)  $|2| =$
- d)  $|-4| =$

(6.NS.7c)

19. What is the solution to the following problems?

- a)  $x^2 =$
- b)  $x^3 =$

(8.EE.2)

20. Evaluate the numbers below.

- a)  $\sqrt{4} =$
- b)  $\sqrt{9} =$
- c)  $\sqrt{16} =$
- d)  $\sqrt{25} =$
- e)  $\sqrt{36} =$
- f)  $\sqrt{49} =$
- g)  $\sqrt{64} =$
- h)  $\sqrt{81} =$
- i)  $\sqrt{100} =$
- j)  $\sqrt{121} =$
- k)  $\sqrt{144} =$
- l)  $\sqrt{169} =$

(8.EE.2)

21. Evaluate the numbers below.

- a)  $\sqrt[3]{8} =$
- b)  $\sqrt[3]{27} =$
- c)  $\sqrt[3]{64} =$
- d)  $\sqrt[3]{125} =$
- e)  $\sqrt[3]{216} =$
- f)  $\sqrt[3]{343} =$

(8.EE.2)

22. What type of number is  $\sqrt{2}$ ?

(8.EE.2)

23. Place the following numbers on a number line and give a decimal approximation to the tenths place.

$$\sqrt{5}, \sqrt{2}, \sqrt{10}, \sqrt{16}, \sqrt{8}, \sqrt{20}, \sqrt{3}$$

(8.NS.2)

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