

REAL NUMBER SYSTEM STUDY GUIDE

Solve each of the problems below. These represent the types of questions on your test. Be sure to ask questions if you need more help with a topic.

I CAN EVALUATE SQUARE ROOTS OF SMALL PERFECT SQUARES.

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| <p>1. Evaluate the following:</p> <p>a) $2\sqrt{49} =$ _____</p> <p>b) $-\sqrt{100} =$ _____</p> <p>c) $10 + \sqrt{169} =$ _____</p> | <p>2. The square pool at Sammie's gym has an area of 144 square feet. What is the length of one side of the pool?</p> | <p>3. Alaina bought a square frame for her desk that has an area of 81 square inches. What is the perimeter of the frame?</p> |
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I CAN REPRESENT RATIONAL NUMBERS AS DECIMALS.

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| <p>4. Give an example of a fraction that could be represented as a repeating decimal.</p> | <p>5. Give an example of a fraction that could be represented as a terminating decimal.</p> |
| <p>6. Ricky ran $\frac{7}{16}$ of a mile before stopping to tie his shoe. Represent the distance he ran as a decimal. Then, state if the decimal is terminating or repeating.</p> | <p>7. Emily ended up using $\frac{7}{3}$ cups of flour in a recipe for cookies. Express the amount of flour that she used as a decimal. Then, state if the decimal is terminating or repeating.</p> |

I CAN REPRESENT DECIMALS AS RATIONAL NUMBERS.

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| <p>8. Express 0.125 as a fraction in simplest form.</p> | <p>9. Express -0.4 as a fraction in simplest form.</p> |
| <p>10. Express $0.\bar{5}$ as a fraction in simplest form.</p> | <p>11. Express $0.\bar{15}$ as a fraction in simplest form.</p> |

I CAN CLASSIFY REAL NUMBERS.

12. Fill in the first blank of each sentence with either "rational" or "irrational". Then, fill in the second blank with your justification.

- a) 0.87 is _____ because _____.
- b) $-\sqrt{121}$ is _____ because _____.
- c) $\frac{19}{99}$ is _____ because _____.
- d) $\sqrt{70}$ is _____ because _____.
- e) $0.\overline{72}$ is _____ because _____.

13. The set of values below contains only irrational numbers:

$$\{-\sqrt{82}, 6.82941\dots, \sqrt{11}, \underline{\hspace{1cm}}\}$$

Which could be the fourth value in the set?

- a. 6.825 c. 3π
 b. $\frac{4}{3}$ d. $0.\overline{7}$

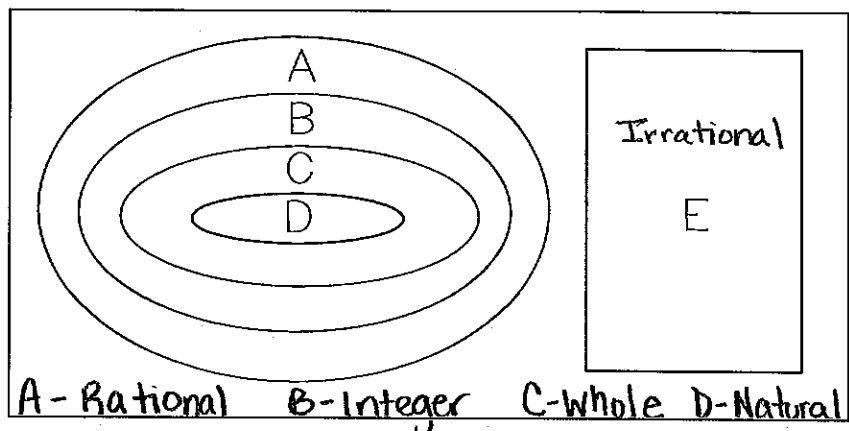
14. Cameron classified $-\frac{18}{3}$ as real, rational, integer and a whole number. Is he correct? Why or why not?

15. Classify the following numbers to all of the number sets which they belong. (Choose from real, irrational, rational, integer, whole and natural).

- a) -18.75 _____
- b) $\sqrt{36}$ _____
- e) $-\pi^2$ _____

16. The graphic organizer is used to organize sets of real numbers. List the section that each number would belong in.

- a) 0 _____
- b) $\sqrt{3}$ _____
- c) $\frac{8}{5}$ _____
- d) $-\frac{14}{7}$ _____
- e) $\sqrt{25}$ _____



17. Label the following statements as true or false:

- a) Every real number is a rational number. c) Some irrational numbers are integers.
 b) Every whole number is an integer. d) Some integers are natural numbers.

I CAN APPROXIMATE THE VALUE OF IRRATIONAL NUMBERS.

18. Between which two whole numbers does $\sqrt{150}$ lie?

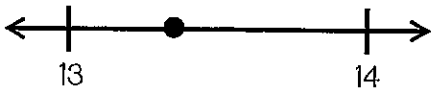
19. Which of the following is a true statement?

- a. $7 < \sqrt{65} < 8$
- b. $2 < \sqrt{7} < 3$
- c. $10 < \sqrt{95} < 11$
- d. $13 < \sqrt{160} < 14$

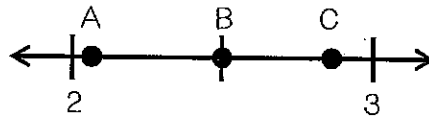
20. A square sandbox has an area of 75 square feet. Estimate the length of one of the sides of the sandbox.

I CAN LOCATE IRRATIONAL NUMBERS ON A NUMBER LINE.

21. Shiloh estimated $\sqrt{190}$ by placing the point on the number line below. Explain how his estimate could be improved.



22. Which point below is the best estimate for $\sqrt{5}$?

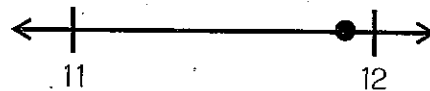


23. The point below best represents which of the following?



- a. $\sqrt{80}$
- b. $\sqrt{72}$
- c. $\sqrt{67}$

24. The point below best represents which of the following?



- a. $\sqrt{142}$
- b. $\sqrt{125}$
- c. $\sqrt{146}$