

8NS REVIEW

NAME Answer Key

I.

Write the fraction that represents the repeating decimal.

9. $0.5454\dots$ $\frac{54}{99}$

10. $0.4848\dots$ $\frac{48}{99}$

Determine if the square root is a rational or irrational number. Explain your reasoning.

11. $\sqrt{20}$ irrational, 20 is not a perfect square12. $\sqrt{61}$ irrational, 61 is not a perfect square13. $\sqrt{101}$ irrational, 101 is not a perfect square

Tell whether the statement is true or false.

14. The set of integers contains the set of rational numbers.

False, all fractions are not integers

15. Every repeating decimal is a rational number.

True, they can be written as a fraction

16. Every square root is an irrational number.

False, only square roots of non perfect squares are irrational. The square root of a perfect square is rational.

Tell whether the statement is true or false.

19. Every terminating decimal is a rational number.

True, they can be written as a fraction.

20. The set of natural numbers contains the set of integers.

False, only the positive integers are natural

21. Zero is an integer.

True

22. A square root is sometimes a rational number.

True, if the number is a perfect square

Which number belongs to the set of rational numbers but does not belong to the set of whole numbers?

can be fraction, negative

- a. -1
- b. 0
- c. 1
- d. 2

Which set of numbers does not contain 0?

- a. Whole Numbers
- b. Natural Numbers (counting), starts at 1
- c. Integers
- d. Rational Numbers

Which square root would be classified as rational? (perfect square)

- a. $\sqrt{2}$
- b. $\sqrt{16} = 4$
- c. $\sqrt{24}$
- d. $\sqrt{40}$

Which fraction is equivalent to 0.75?

- a. $\frac{75}{100}$
- b. $\frac{20}{33}$
- c. $\frac{25}{33}$
- d. $\frac{3}{4}$

$$\frac{75}{100} \div 3 = \frac{25}{33}$$
$$\frac{99}{33} = \frac{3}{1}$$

Which set of numbers is contained in the set of rational numbers?

- a. Whole Numbers
- b. Natural Numbers
- c. Integers
- d. All of the above

Which statement is false?

- a. All natural numbers are integers. T
- b. All whole numbers are natural numbers. F, 0 is not natural
- c. All integers are rational numbers. T
- d. All whole numbers are integers. T

20. Select all of the following numbers that are irrational?

a. -2

b. $\sqrt{100} = 10$

c. $\frac{22567}{45378}$

d. $\sqrt{49} = 7$

e. 2.45876844531249378521...

f. $\sqrt{2}$

21. Write the following numbers from least to greatest.

a. $-\sqrt[4]{6}$ $-\sqrt[9]{\frac{13}{2}}$ -2.5 $-\sqrt{4}$
 ~ -2.45 $-\sqrt[9]{6.5}$ -2
 ~ -2.55

$-\sqrt{\frac{13}{2}} < -2.5 < -\sqrt{6} < -\sqrt{4}$

b. 14

$\sqrt{18} \approx 4.2$

4π
 $4(3.14)$
 ~ 12

$\sqrt{25} = 5$

$\sqrt{18} < \sqrt{25} < 4\pi < 14$

22. Which number cannot be written in the form $\frac{p}{q}$, where p and q are integers?

A. $\sqrt{16} = 4$

C. $\sqrt[3]{8} = 2$

E. $\sqrt{1} = 1$

B. 1.23232323...

$\frac{123}{99} = \frac{122}{99}$

D. -18