Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_

**Rational and Irrational Numbers 8.NS.1**

**Directions:** Please choose the best answer choice for each of the following questions.

1. When written as decimals, these numbers neither terminate or repeat.
   1. Integers
   2. Whole numbers
   3. Rational numbers
   4. Irrational numbers
2. Which of the following number is an irrational number?
   1. 0.17
   2. √2
   3. √4
3. Skyler collects postage stamps like the one shown. Which value is an irrational number?

Each side length measures inch.

* 1. The area of the stamp
  2. The perimeter of the stamp
  3. One-third the area of the stamp
  4. The length of the stamp’s diagonal

1. Anna used her calculator to determine which number in a given list

was irrational. When she typed each number into her calculator, the display showed a decimal for each one. Here are the decimal numbers she saw. Which is an irrational number?

* 1. 0.25
  2. 0.3333333333
  3. 1.41421352
  4. 5.0

1. Which lists gives examples of irrational numbers?
   1. 7, 11, 13
   2. -42, 0, 21
   3. √2,√5, ∏
   4. 0.3, 0.12, -0.6
2. Kim needed to change many fractions into decimals. When she finished, what did she MOST LIKELY find?
   1. All the decimals were repeating.
   2. All the decimals were terminating.
   3. None of the decimals terminated or repeated.
   4. Some of the decimals terminated and some repeated.
3. Which statement best describes a difference between rational and irrational numbers?
   1. A rational number can be expressed as a repeating decimal.
   2. An irrational number can be expressed as a terminating decimal.
   3. An irrational number can be expressed as the ratio between two integers.
   4. A rational number can be expressed as the square root of a prime number.
4. Aimee’s circular swimming pool has a radius of 4.5 feet and a height of 3 feet. Which value is an irrational number?
   1. The height of the pool.
   2. The radius of the pool.
   3. The diameter of the pool.
   4. The circumference of the pool.

**Directions:** Determine if the given number is rational or irrational. If the number is irrational, explain why. If the number is rational, convert to its rational form (write as a ratio).

1. 0.23

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1. √17

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