Name: _____

MAT 120   **Quiz 0**   Fall 2023

1. The number zero qualifies as:

   i) a rational number   ii) an integer   iii) an irrational number

   a) i) only   b) i) and ii) only   c) ii) and iii) only   d) i) and iii) only   e) none of these

   Correct Answer: i) and ii) only

2. Which of the following types of numbers are also rational numbers?

        i) whole numbers   ii) integers   iii) reciprocals of nonzero rational numbers

   a) i) only   b) i) and ii) only   c) iii) only   d) i) and iii) only   e) all of them

   Correct Answer: all of them

3. Which of the following are integers?

        i) $\sqrt{2}$ ii) $\frac{1}{2}$ iii) 2^4

   a) all of them   b) i) only   c) i) and ii) only   d) iii) only   e) ii) and iii) only

   Correct Answer: iii) only

4. Which of the following decimal patterns describes a rational number:

   i) 0.100101001010010...

   ii) 0.10100100010000...

   iii) 0.1234555555555...

   a) i) only   b) i) and ii) only   c) all of them   d) iii) only   e) i) and iii) only

   Correct Answer: i) and iii) only

5. Which of the following are rational numbers?

        i) .12345   ii) .33$\dot{3}$ (repeating)   iii) $\sqrt{2}^4$

   a) i) only   b) all of them   c) i) and ii) only   d) iii) only   e) i) and iii) only

   Correct Answer: all of them

6. Which of the following are real but not rational numbers?

        i) $1 + i$ ii) i^2 iii) $\sqrt{8}$

   a) i) only   b) none of them   c) i) and ii) only   d) iii) only   e) i) and iii) only

   Correct Answer: iii) only

7. Which of the following are complex but not real numbers?

        i) $1 + i$ ii) i^2 iii) $(1 + i)^2$

   a) i) only   b) all of them   c) i) and ii) only   d) iii) only   e) i) and iii) only

   Correct Answer: i) and iii) only

8. A rational number is one which:

   i) can be expressed as a ratio of two integers a/b, $b \neq 0$

   ii) can be written as the product of two integers

   iii) can be written as a repeating decimal expansion

   (Choose all answers which apply to all rational numbers.)

   a) all of them   b) i) only   c) ii) and iii) only   d) i) and ii) only   e) i) and iii) only

   Correct Answer: i) and iii) only Also "all of them" was accepted as correct, since some students might have thought the question was asking for which statements can describe some rational numbers but not all of them.