**MOCK TEST**

**I Complete the gaps using one word per gap:**

In number theory, Fermat's Last Theorem \_\_\_\_\_\_\_\_\_\_\_\_\_ that no three positive integers a, b, and c satisfy the equation an + bn = cn for any integer value of n greater than 2. The cases n = 1 and n = 2 \_\_\_\_\_\_\_\_\_ been known to have infinitely many solutions since antiquity.

This theorem \_\_\_\_\_\_\_\_\_\_\_ first proposed by Pierre de Fermat \_\_\_\_\_\_\_\_\_\_\_ 1637 in the margin of a copy of Arithmetica, where he claimed he had a proof \_\_\_\_\_\_\_\_\_\_\_\_ was too large to fit in the margin. \_\_\_\_\_\_\_\_\_\_\_ first successful proof was released in 1994 \_\_\_\_\_\_\_\_\_ Andrew Wiles, and formally published in 1995, after 358 years of effort by mathematicians. The unsolved problem stimulated \_\_\_\_\_\_\_\_\_\_\_\_\_ development of algebraic number theory in the 19th century and the proof of the modularity theorem in the 20th century. It is among the \_\_\_\_\_\_\_\_\_\_\_ notable theorems in the history of mathematics and prior to its proof, it was in the Guinness Book \_\_\_\_\_\_\_\_\_\_\_ World Records as the "\_\_\_\_\_\_\_\_\_ difficult mathematical problem", one of the reasons being that it has the largest number of unsuccessful proofs.

**II Complete the text using some of the words provided below:**

***secluded influenced brief geometry estimated***

***sort secured sound comprehensive contribution***

After receiving a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ education in mathematics, classics, and law at La Flèche and Poitiers, René Descartes embarked on a \_\_\_\_\_\_\_\_\_\_\_\_\_\_career in military service with Prince Maurice in Holland and Bavaria. Unsatisfied with scholastic philosophy and troubled by skepticism of the \_\_\_\_\_\_\_\_\_\_\_\_\_ explained by Montaigne, Descartes soon conceived a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plan for applying mathematical methods in order to achieve perfect certainty in human knowledge. During a twenty-year period of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ life in Holland, he produced a body of work that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ his philosophical reputation. Descartes moved to Sweden in 1649, but did not survive his first winter there.

**III Complete the definitions:**

1. In geometry, an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ triangle is a triangle that has two sides of equal length.

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is one of the four basic operations of arithmetic, the others being addition, subtraction, and multiplication.

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mathematics is a branch of mathematics that deals with mathematical methods that find use in science, engineering, business, computer science, and industry.

4. A process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer is called an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5. The line that separates the numerator and the denominator is called the \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_.

6. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a circle is the length of the line from the center to any point on its edge.

7. An \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ says that two things are equal. It will have an equals sign "=" like this: 7 + 2 = 10 − 1.

**IV Complete with the correct form of the verb in brackets:**

Euclid was a Greek mathematician, often \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (refer) to as the "father of geometry". His Elements \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (be) one of the most influential works in the history of mathematics, serving as the main textbook for teaching mathematics from the time of its publication until the late 19th or early 20th century. In the Elements, Euclid \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (deduce) the principles of what is now called Euclidean geometry from a small set of axioms. The date, place and circumstances of both his birth and death are unknown and may only \_\_\_\_\_\_\_\_\_\_\_\_\_ (estimate) roughly relative to other people mentioned with him. He \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (mention, rarely) by name by other Greek mathematicians from Archimedes onward.

Proclus introduces Euclid only briefly in his Commentary on the Elements. Proclus believes that Euclid must have lived during the time of Ptolemy I because he \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (mention) by Archimedes. Although the apparent citation of Euclid by Archimedes has been judged to be an interpolation by later editors of his works, it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (still, believe) that Euclid wrote his works before those of Archimedes.

Because the lack of biographical information is unusual for the period, some researchers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (propose, recently) that Euclid was not a historical character and that his works were written by a team of mathematicians who took the name Euclid from the historical character Euclid of Megara. However, this hypothesis \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (accept) well by scholars and there is little evidence in its favor.

In addition to the Elements, at least five works of Euclid \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (survive) to the present day.

**V Change the sentence into the passive form:**

1. Scientists use mathematical formulas to express their findings precisely.

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2. Students are considering the properties of sets.

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3. We will use this frame of reference to locate a point in space.

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4. Research teams are developing new technologies to make even better machines.

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5. The students have learnt a lot of new English words.

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6. By the end of the conference, the participants had discussed a number of important questions concerning the problem.

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**VI Complete using the correct form of the conditionals:**

1. If you \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (heat) water enough, it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (boil).

2. If universities received more money, more research \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (do).

3. The report \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (finish) tomorrow, if we \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (not waste) our time.

4. If I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (be) you, I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (try) to solve the equation again.

5. \_\_\_\_\_\_\_\_\_\_\_\_ there \_\_\_\_\_\_\_\_\_\_\_\_ (be) a remainder if you \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (divide) 31 by 7?

6. \_\_\_\_\_\_\_\_\_\_\_\_\_ you \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (be) surprised if I passed the test?

**VII Change the direct into indirect speech:**

1. She added: “ I have been interested in geometry all my life.”

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2. He said: “I will know more about the experiment next week.”

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3. Descartes, father of modernism, said, "All nature is a vast geometrical system. Thus all the phenomena of nature are explained and some demonstration of them can be given."

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4. Andrew Wiles said: „It was the most important moment in my working life. Nothing I ever do again will be the same.“

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5. A Mathematician said: „My love for my friends is like a circle. It has no sides to be broken, no ends to be ended and no angle to be measured.“

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**VIII Answer the following questions:**

1. Who is the greatest mathematician in your opinion and why?

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2. Mathematics has found many applications in everyday life. Give examples.

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3. What qualities should a teacher of mathematics have?

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