**Set theory & Logic– video lecture experience**

**Watch** the video lecture on sets, logic, and computability from the historical point of view, given by N.J. Wildberger PhD. Do the following tasks.

**Task 1:** Answer the following questions.

1. What role did the question “What is a function?” play in the development of set theory?
2. Why does doctor Wildberger consider the set theory, logic, and computability problematic?
3. In your own words, explain the ‘Dedekind Cut’.
4. Why was Cantor’s theory important for the development of Dedekind cuts?
5. What is the difference between the ‘choice’ and ‘algorithm’ points of view of a function?
6. What is the difference between ordinals and cardinals?
7. Why is the answer to the Russel paradox “both yes and no”?
8. Why were the paradoxes so disturbing at the time?
9. What does Dr Wildberger see as an “interesting turnaround of things”?
10. What main thoughts of the three schools of logic are mentioned in the video?

**Note:** In the following tasks the numbers in parentheses indicate the minute in which the words are said. (Although some of them are repeated multiple times.)

**Task 2:** Listen carefully. What do these expressions mean in the context?

1. …it straddles mathematics and philosophy… (8)
2. to pin down the meanings of the words (9)
3. A is just the complement (17)
4. derivation (17)
5. the empty set (24)
6. the union of all of them (26)
7. in a, admittedly, brilliant piece of work…(29 - 30)
8. set theory was the underpinning of analysis (41)
9. rules of inference (50)
10. the problem is that of consistency (51)

**Task 3.** Focus on the following pairs of words. Before listening, mark where you would expect the main stress to be. Then listen and verify your estimate. (The number in brackets indicates the minute where the words are said. Some of them are repeated many times.)

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| problem (1) | - | problematic (9) |
| axioms (50) | - | axiomatic (47) |
| logic (43) | - | logistic (44) |
| formula (21) | - | formulaic (50) |
| theory (6) | - | theoretical (7) |
| mechanize (50) | - | mechanical (51) |

**Formulate the general stress rule.**

(Optional: listen for more examples from the lecture.)