

## Lecture 2: Quiz

Name:

Number systems are ordered  $N \subset Z \subset Q \dots$ . The integers  $Z$  has the natural numbers  $N$  just below and the rational numbers  $Q$  just above. Which number system is just below the algebraic numbers and which is the next above?

|                  |                      |
|------------------|----------------------|
| complex numbers  | <input type="text"/> |
| rational numbers | <input type="text"/> |
| natural numbers  | <input type="text"/> |

|                   |                      |
|-------------------|----------------------|
| integers          | <input type="text"/> |
| real numbers      | <input type="text"/> |
| algebraic numbers | <input type="text"/> |

### Problem 1



|                      |                      |              |                      |
|----------------------|----------------------|--------------|----------------------|
| YBC 7289             | <input type="text"/> | Plympton 322 | <input type="text"/> |
| Bakhshali Manuscript | <input type="text"/> | Rynd papyrus | <input type="text"/> |

This document is the

### Problem 5

Which of the following numbers are known to be irrational?

|            |                      |
|------------|----------------------|
| $\pi$      | <input type="text"/> |
| $e$        | <input type="text"/> |
| $\sqrt{2}$ | <input type="text"/> |

|                |                      |
|----------------|----------------------|
| $1/\sqrt{4}$   | <input type="text"/> |
| $1/\sqrt{5}$   | <input type="text"/> |
| $\log_{10}(5)$ | <input type="text"/> |

### Problem 2

On which base was the **Mayan number system** based?

|    |                      |
|----|----------------------|
| 6  | <input type="text"/> |
| 10 | <input type="text"/> |
| 12 | <input type="text"/> |

|     |                      |
|-----|----------------------|
| 20  | <input type="text"/> |
| 60  | <input type="text"/> |
| 100 | <input type="text"/> |

### Problem 6

Where was zero invented?

|           |                      |
|-----------|----------------------|
| In Mexico | <input type="text"/> |
| In China  | <input type="text"/> |
| In Egypt  | <input type="text"/> |
| In India  | <input type="text"/> |

|           |                      |
|-----------|----------------------|
| In Rome   | <input type="text"/> |
| In Irak   | <input type="text"/> |
| In Greece | <input type="text"/> |
| In Congo  | <input type="text"/> |

### Problem 3

Which integer does this **hieroglyph** represent? Remember: priest, frog, finger, flower, monkey, arc.



### Problem 4

### Problem 7

In which time period do the Clay tablets in Mesopotamia belong?

|        |                      |        |                      |
|--------|----------------------|--------|----------------------|
| 2000BC | <input type="text"/> | 4000BC | <input type="text"/> |
| 2000AC | <input type="text"/> | 1000AC | <input type="text"/> |

### Problem 8

Why do we **extend** a number system and make it larger?

|  |                      |
|--|----------------------|
| Solving equations                        | <input type="text"/> |
| To compute with large numbers            | <input type="text"/> |
| To allow more operations to have results | <input type="text"/> |