

RECEP DENİZ AKSOY

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**ZERO**

**NUMBERS**

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# COUNTING

- ▶ There were only "one" and "many"
- ▶ Then "one" "two" and "many"
- ▶ ...

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# ZERO

- ▶ Babylonians invented it.
- ▶ Greeks banned it.
- ▶ Hindus worshipped it.

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## GREEKS...

- ▶ From Pythagoras' perspective, everything in the universe was governed by ratios.
- ▶ Greeks represented all numbers by geometry. Zero did not make sense in geometry.
- ▶ Then irrational numbers was found.
- ▶ Golden ratio was a irrational number.
- ▶ Cult turned to violence.

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## THEN...

- ▶ In the 7th century Hindu mathematician Brahmagupta developed terms  $+$ ,  $-$ ,  $/$  for zero.
- ▶ Arabic and East culture adapted it.
- ▶ 13th century Europe adapted it.

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# MATHEMATICS EVOLVED

- ▶ From practical to abstract functions.
- ▶ Zero is the cornerstone of Calculus.

# PROBLEMS

$$\frac{0}{0}$$

$$0^0$$

$$0!$$