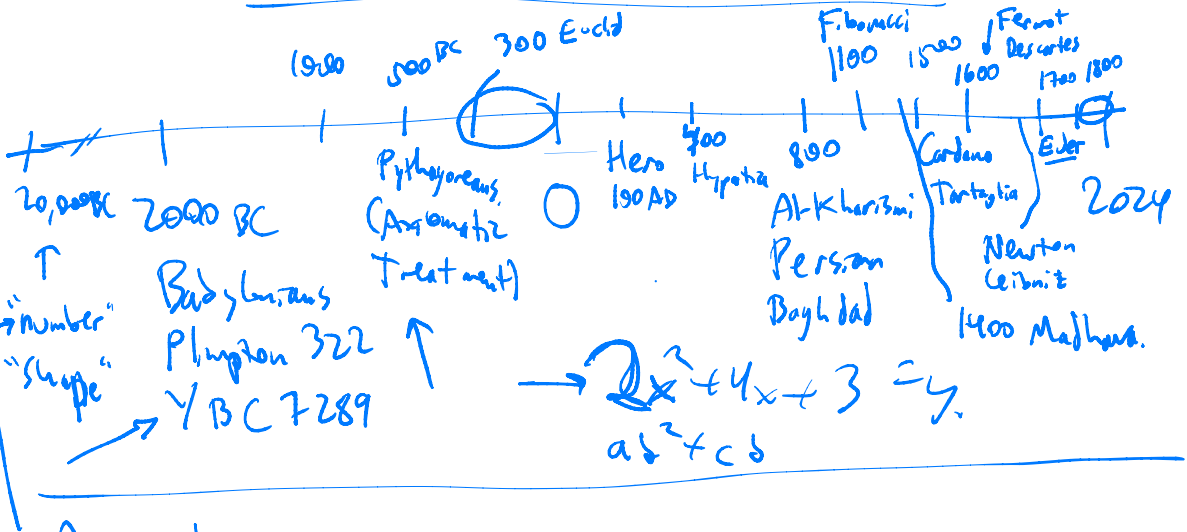
Overview Of Course:



Anecdote:

(1) 1 hunter enters, birds rise
1 hunter leaves, birds come down.

(2) 2 hunters enter, birds rise.
1 hunter leaves, birds stay.
1 hunter leaves, birds down.

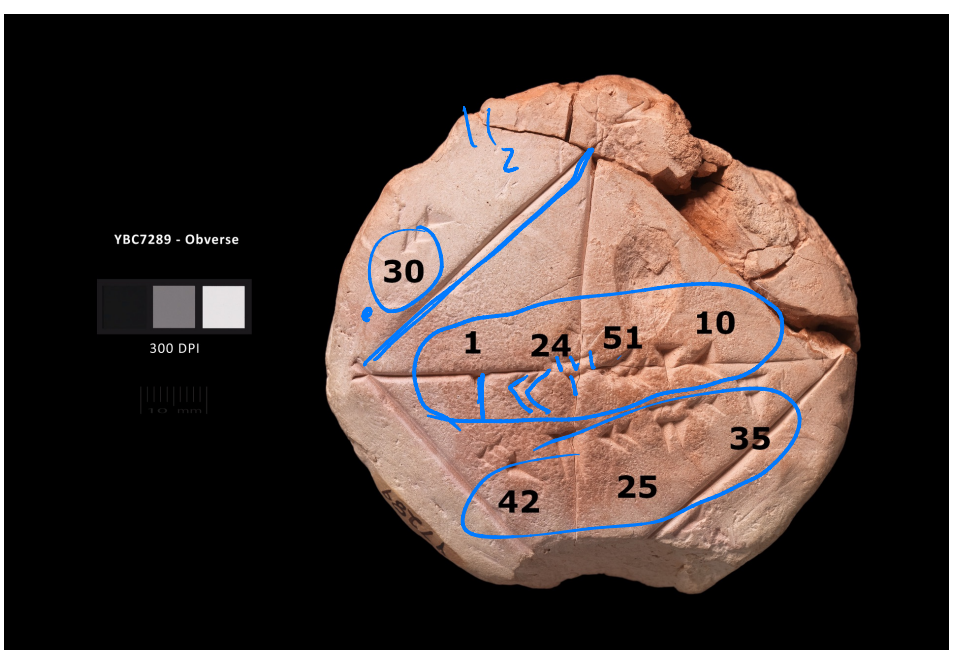
(3) 3 hunters enter, ↑.
2 hunters leave, ↑
1 hunter leaves, ↓.

(9) 4 hunters enter, ↑
3 hunters leave, ↓.

Birds: 1, 2, ∞.

one, two, three, four, five.
first, second, third, fourth, fifth
ordinals (adjectives)
cardinals (noun).

Note: in Turkish, ordinals and cardinals follow a perfect pattern, from the beginning! But this is because Turkish was completely reformed (1923-28) after the fall of the Ottoman empire



YBC 7289

1 24 51 10

Sexagesimal System (base 60).

$7289.3 = 7\cdot 10^3 + 2\cdot 10^2 + 8\cdot 10^1 + 9\cdot 10^0 + 3\cdot 10^{-1}$

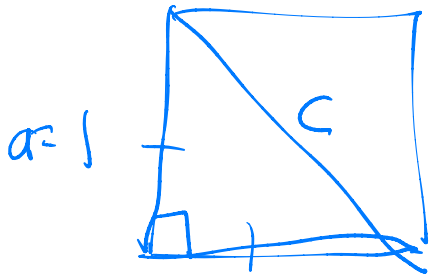
7 89 7089 70,89.

1 = 10.

$$1 + \frac{24}{60} + \frac{51}{60^2} + \frac{10}{60^3}$$

$= 1.41421296\ldots$ ← agree to $\frac{1}{10^6}$.

$\sqrt{2} = 1.414213\ldots$ ←



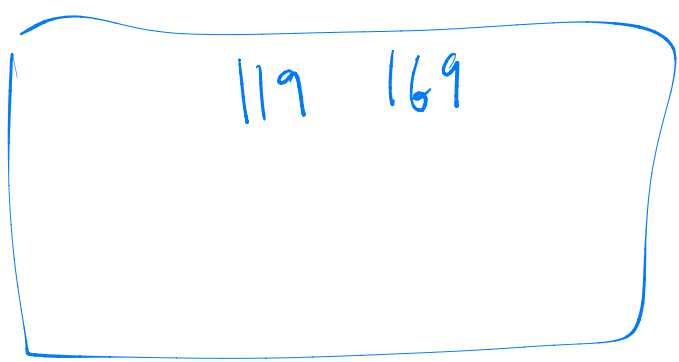
Pythagorean Theorem.

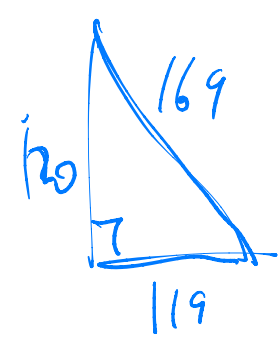
$2 = 1^2 + 1^2 = a^2 + b^2 = c^2$

$c = \sqrt{2}$.

Conjecture : This was a kid's homework assignment. The main diagonal was perhaps a reminder of sqrt 2 learned in class. And the student was asked to work out the diagonal for a 1/2 x 1/2 square instead of 1x1 square. ????

Plimpton 322. (Columbia)





$169^2 = 28561$

$-\ 119^2 = 14161$

$120^2 = 14400$

Caveats:

- Math courses are supposed to be all about learning a skill, i.e., how to effortlessly solve entire classes of problems. This course does *not* do that. [Every other course in this deparment does!] If you only learn that 1/2 + 1/3 = 5/6, and the How and Why this fact was discovered, then, without the practice of solving 100s of other similar problems, you certainly will *not* develop the skill of effortless fraction addition. In this class, we will learn *about* amazing breakthroughs, and will truly solve those particular problems and prove real theorems, but because we'll be jumping from topic to topic, it's not reasonable to try to also simultaneously ask you to become proficient at all of these different subjects. [To do that, take the other courses in our amazing Math Department, one at a time!]

- Mathematics is the pursuit and discovery of TRUTH, absolute, universal truth. Our understanding of History is only as good as the documents that survived antiquity, as well as our ability to read / analyze / interpret said documents. So the historical components of what we learn in this class might all be upended tomorrow, if some amazing new archeological dig shows new evidence. [But the validity of mathematical theorems and their proofs is constant in space-time; theorems, on investigation, will remain valid, regardless of When/Where/Whom is looking.]