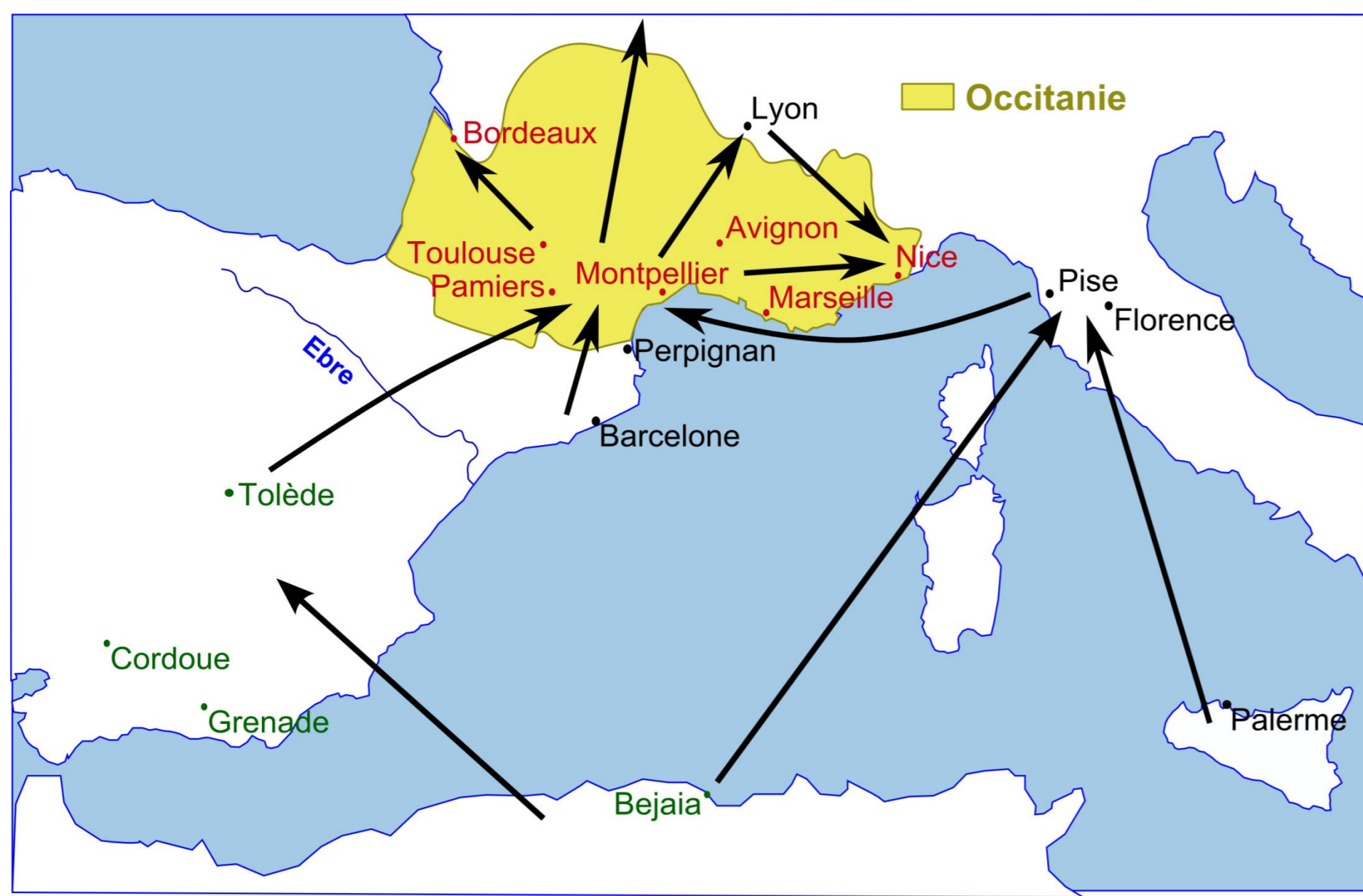


OCCITANIA, HUB FOR THE DIFFUSION OF KNOWLEDGE

MATHEMATICS

IN OCCITANIA

RECKONING

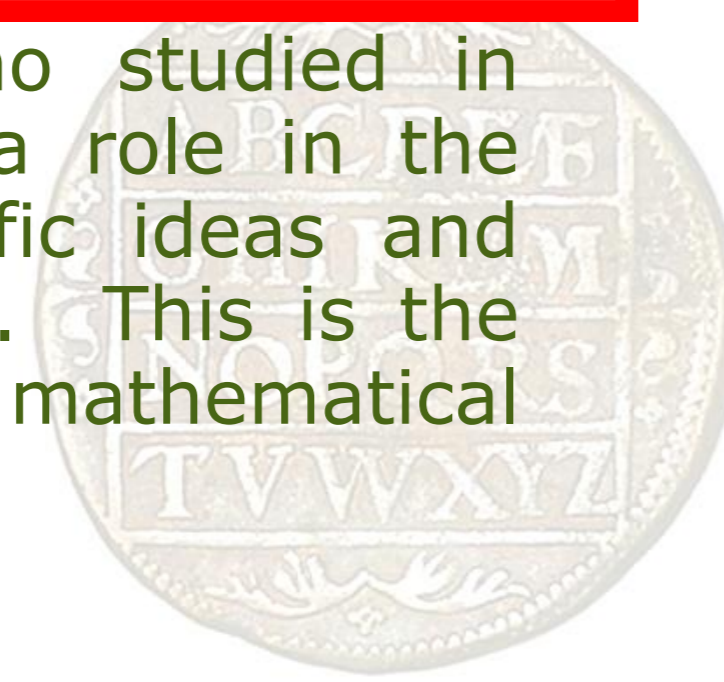


The Arab presence in the Iberian Peninsula, south of the Ebro valley.

Christian scholars in contact with the Arab mathematicians of El Andalus. They measure the entirety of the gap they have to fill in order to catch up from the backwardness of their knowledge in the areas of mathematics and astronomy.

Gerbert d'Aurillac (+ 1003) Pope in the year one thousand

An Aquitaine monk who studied in Catalonia. He played a role in the dissemination of scientific ideas and trained several students. This is the starting point for mathematical activity in Occitania.



Abacus operating with marked tokens for performing multiplication and division.

Drawing of the abacus of Gerbert, 12th century manuscript preserved in Erlangen, Germany.

The Occitan language: From the 10th century on, it is common among scholars who traveled a lot around the Mediterranean.

Factors in the transmission of knowledge



The crusades,



trade,

Jewish immigration, ...

The translators of Toledo

- Gérard de Crémone (12th)
- Robert de Chester (12th)
- Abraham Ibn Daud (12th)
- Adélard de Bath (11th)
- Jean de Séville (11th)

Their translations from Arabic into Latin enabled THE DISSEMINATION AND THE RETURN OF GREEK MATHEMATICS

They translated: The Elements of **Euclid**, **Ptolemy's** Almagest, the Spherical Geometry of **Menelaus**, The Measurement of The Circle by Archimedes, the Arithmetic of **Diophantus**, the Conics of **Apollonius**, Kitab Al jabr wa l-muqabala of **Al Khwārizmī**, the works of **Abū Kāmil**, **Al-Battani**, ...

13th Century: The creation of the great Occitan Universities of **TOULOUSE(1299)** and **MONTPELLIER(1289)**, ...

Fibonacci (circa 1220) and his *Liber Abaci* "Abacus Calculation".

Leonardo of Pisa, took up the Arab methods of algebra and arithmetic, enabling the introduction of place value with zero.

Hebrew translations

from Arabic into Hebrew

BY JEWS OF PROVENCE: **Marseille, Avignon, Arles, Montpellier, Perpignan, Narbonne, Tarascon.**

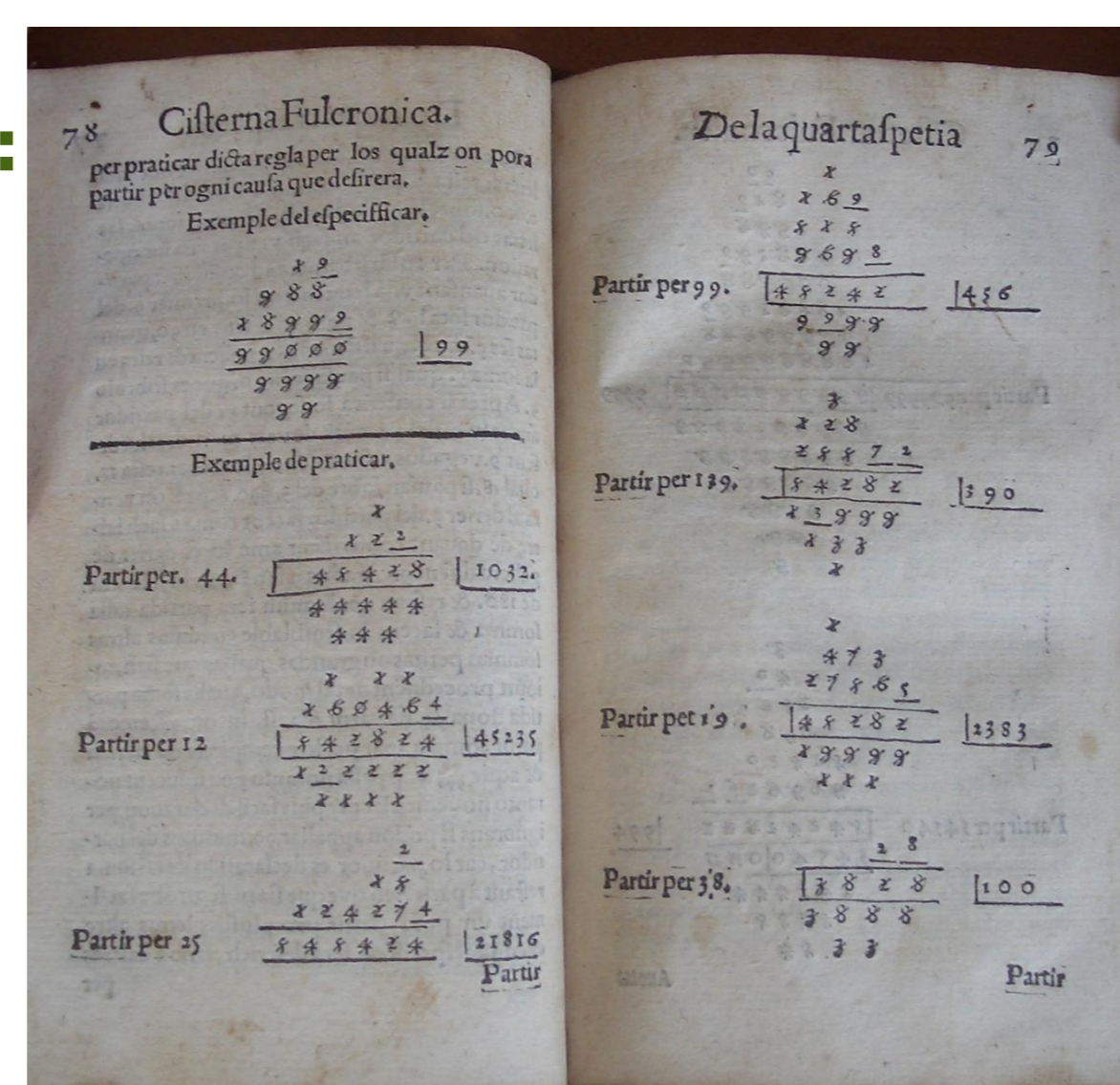
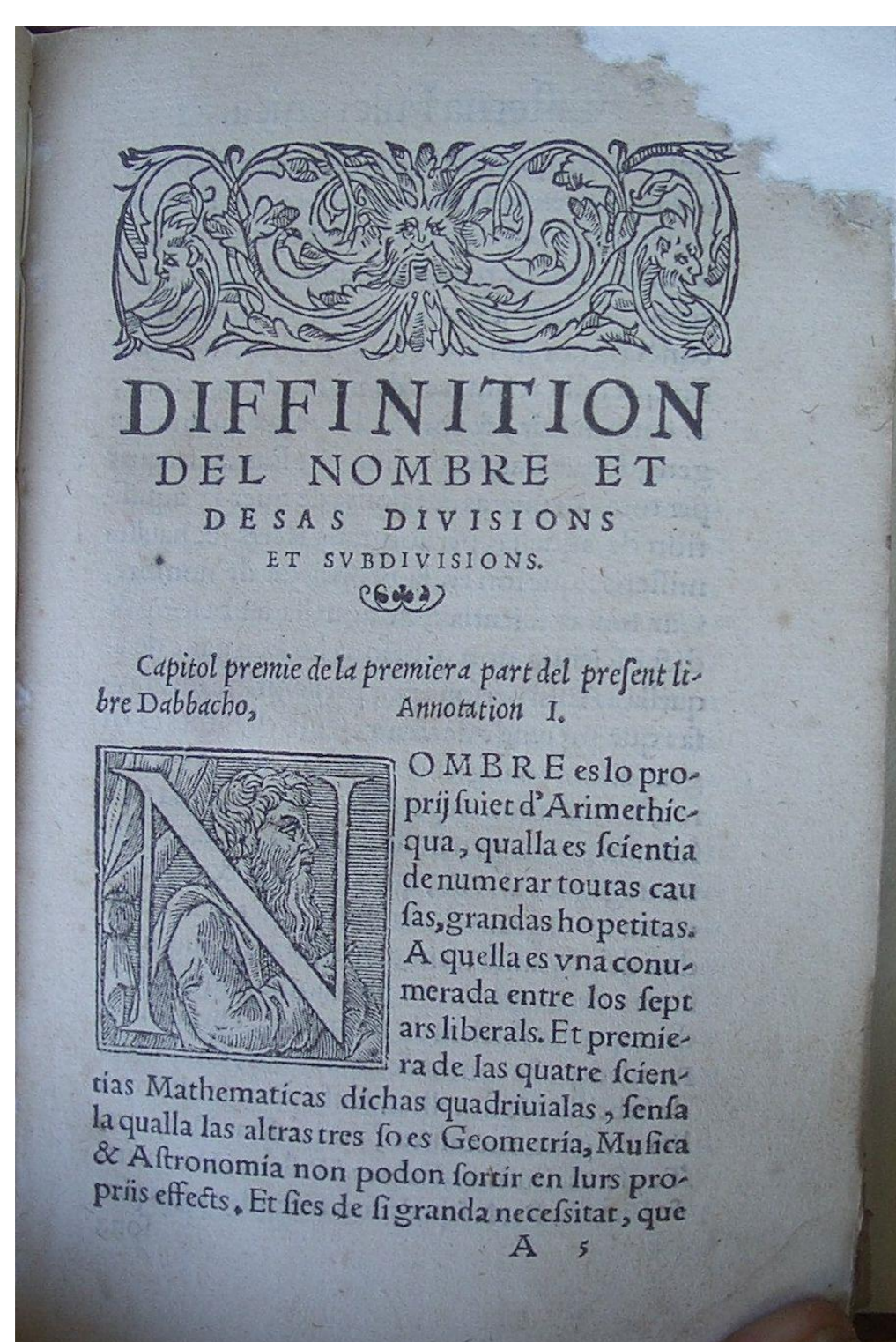
- Mose Ibn Tibbon (13th) (Montpellier)
- Levi Ben Gerson (13th) (Bagnols sur Cèze)

The great time of printed books

15th and 16th centuries

- ❖ THE ELEMENTS OF EUCLID, PTOLEMY'S ALMAGEST, ... in their Latin translations from Arabic texts
- ❖ ARITHMETICS in the vernacular: **Treviso (1478)**, the first commercial arithmetic printed even before the first printing of Euclid's Elements

Mathematical incunabula written in Catalan and Occitan:



La Cisterna fulcronica in 1562 by Joan-Francis Fulconis of Nice

« Quest present libre, per comoditat de joines enfans & altres de quest pays de terra nova de Provensa, & d'altre part non,entendent Latin, es compausat en lenga materna »

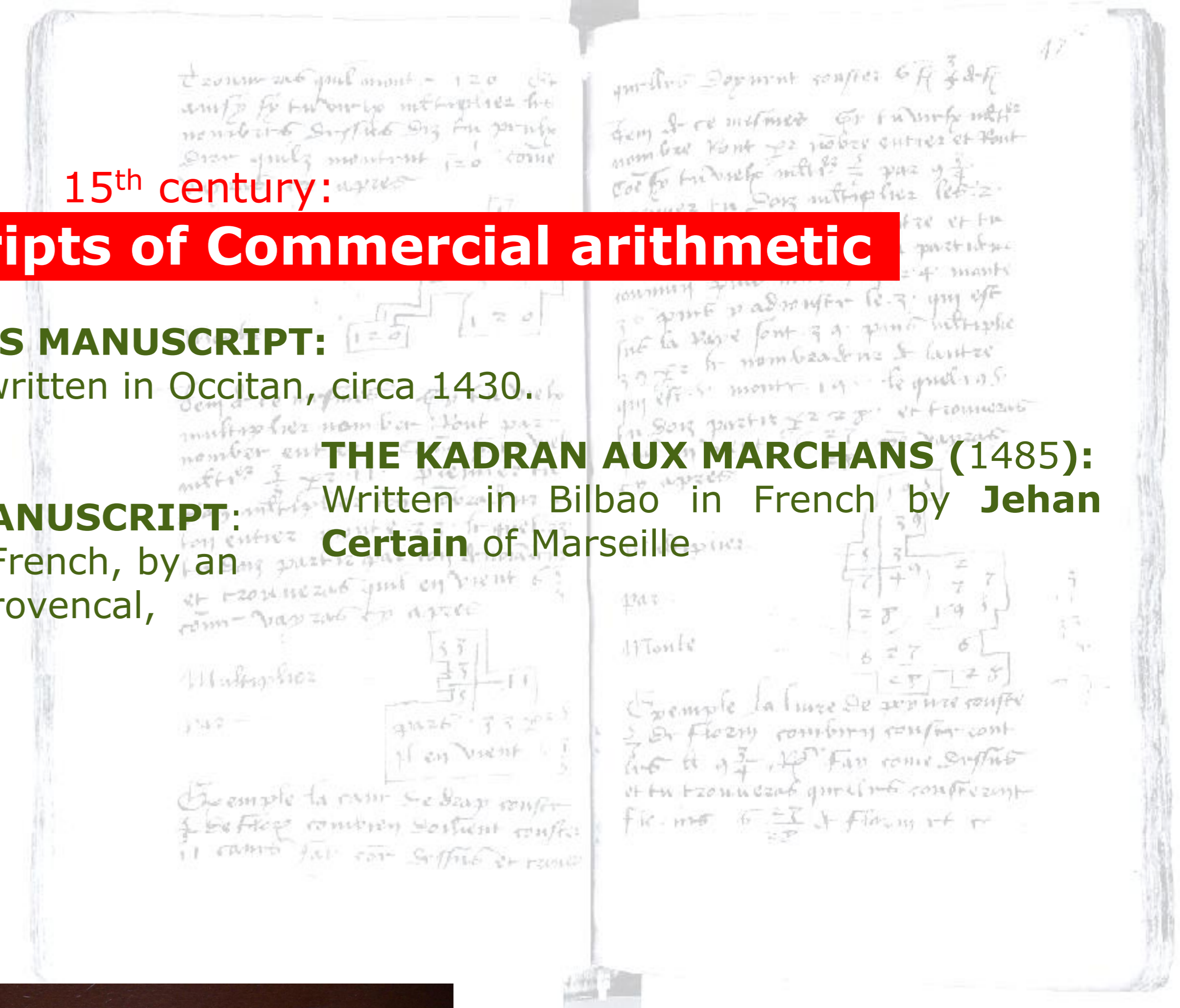
15th century:

Manuscripts of Commercial arithmetic

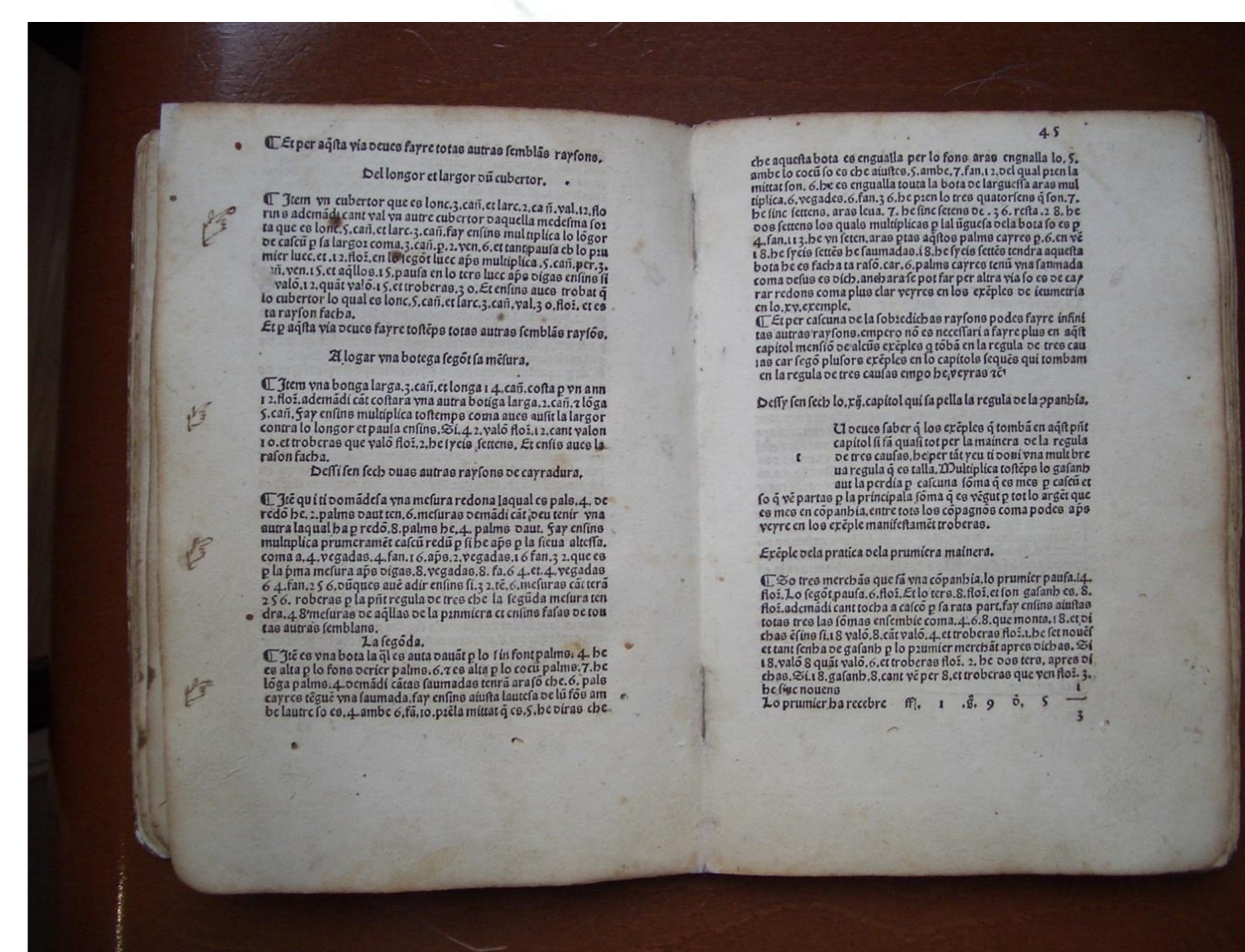
THE PAMIERS MANUSCRIPT: anonymous, written in Occitan, circa 1430.

THE KADRAN AUX MARCHANS (1485): Written in Bilbao in French by Jehan Certain of Marseille

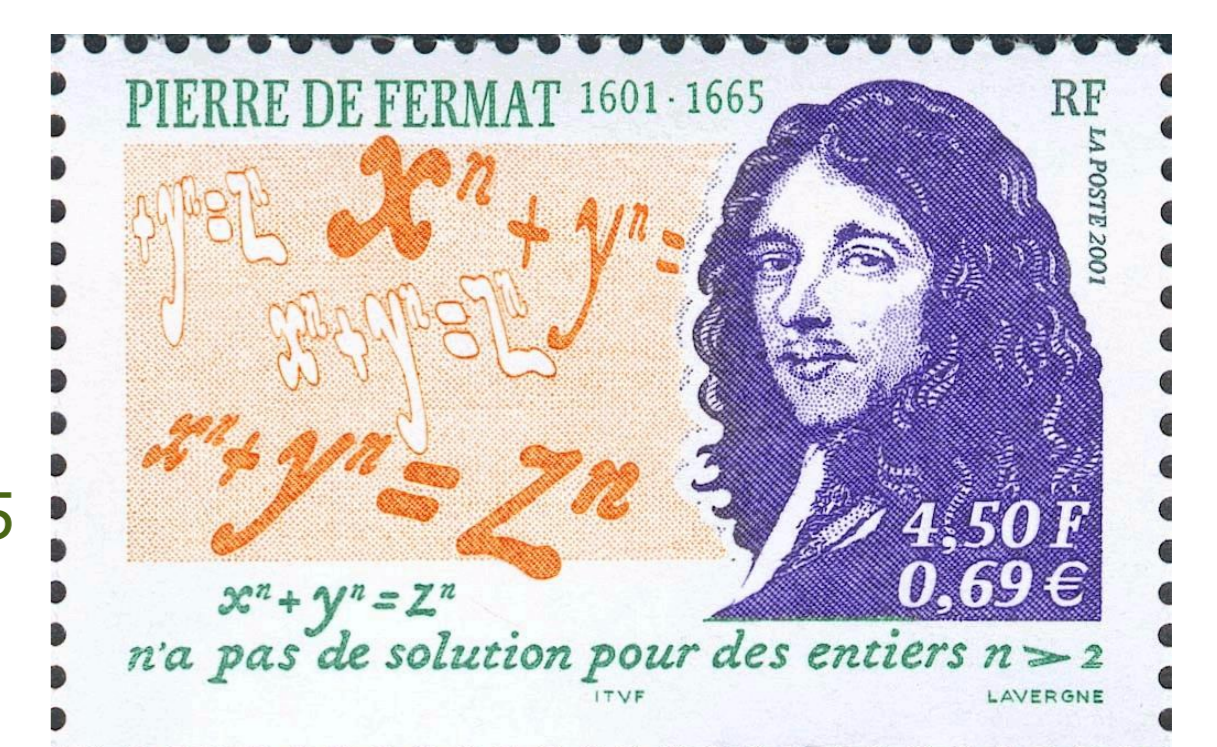
THE 2050 MANUSCRIPT: composed in French, by an anonymous Provençal, circa 1450.



2050 Manuscript, 1450, BNF



Pellos (Nice, 1492), Compendion del Abaco, p45



Pierre de Fermat (1601 – 1665)

Born at Beaumont de Lomagne (Montauban)

Occitania saw the birth of one of the very greatest mathematicians.

