

## MAT 346 Review I

- I. Cultures
  - a. Egyptian
  - b. Babylonian
  - c. Sumerian
  - d. Greek
  - e. Roman
  - f. Chinese
  - g. Hindu
  - h. Arabic
  - i. Italian
- II. Mathematics Topics
  - a. Measurements
    - i. Degrees/Minutes/...
    - ii. Trig tables
  - b. Arithmetic
  - c. Numbers
    - i. Polygonal
    - ii. Perfect
    - iii. Amicable
    - iv. Algebraic
    - v. Irrational
    - vi. Primes, Fermat primes, Mersenne primes
    - vii. Pell's Equation
    - viii. Euclidean Algorithm
    - ix. Chinese Remainder Theorem
    - x. Pascal's Triangle
    - xi. Sexagesimal
    - xii. Commensurable
    - xiii. Value of  $\pi$
  - d. Geometry
    - i. Pythagorean Theorem
    - ii. Squaring the circle
    - iii. Doubling the cube
    - iv. Trisecting the angle
    - v. Quadrature
    - vi. The Elements
    - vii. Regular polygons
    - viii. Platonic solids
    - ix. Conics
    - x. Golden ratio
    - xi. Areas
    - xii. Volumes
    - xiii. Cyclic quadrilateral
  - e. Equations
    - i. Diophantine Equations
    - ii. Systems of Equations
    - iii. Quadratic
- III. Places
  - a. Egypt
  - b. Mesopotamia
  - c. Alexandria
  - d. Syracuse
- IV. People
  - a. Thales
  - b. Pythagoras
  - c. Hippasus
  - d. Hippocrates of Chios
  - e. Euclid
  - f. Fermat
  - g. Gauss
  - h. Mersenne
  - i. Apollonius
  - j. Pappas
  - k. Dandelin
  - l. Pell
  - m. Euler
  - n. Archimedes
  - o. Menaechmus
  - p. Eudoxus
  - q. Ptolemy
  - r. Heron
  - s. Eratosthenes
  - t. Diophantus
  - u. Hypatia
  - v. Sun Zi
  - w. Aryabhata
  - x. Bhaskara I and II
  - y. Brahmagupta
  - z. Al Khwarizmi
  - aa. Omar Khayyam
  - bb. Leonardo of Pisa
  - cc. Galileo Galilei
  - dd. Oresme
  - ee. Recode
  - ff. Harriot
  - gg. Wallis
  - hh. Viete
  - ii. Descartes
  - jj. Cardano
  - kk. del Ferro
  - ll. Pacioli

## MAT 346 Review I

- mm. Ferrari
- nn. Tartaglia
- oo. Bombelli
- pp. Cavalieri

### V. Books, etc.

- a. Papyri – Moscow, Rhind
- b. Plimpton 322
- c. The Elements
- d. The Nine Chapters on the Mathematical Art
- e. Al-Kitāb al-mukhtaṣar fī hīsāb al-ğabr wa'l-muqābala
- f. Mathematical Treatise in Nine Sections
- g. Ars Magna
- h. On floating bodies
- i. On the Sphere and the Cylinder
- j. Archimedes Palimpsest
- k. Conics
- l. Almagest
- m. Liber Abaci
- n. Treatise on Demonstration of Problems of Algebra