

## Math 338: Practice test #2

### 1. (75%) Fill in the blanks:

- a) Descartes found the link between \_\_\_\_\_ and \_\_\_\_\_
- b) Umar Al-Khayammi gave a geometric solution to \_\_\_\_\_ equations.
- c) Cardano and Vieta gave algebraic solutions to \_\_\_\_\_ equations.
- d) Al-Khwarizmi wrote the first book explaining the rules for \_\_\_\_\_
- e) \_\_\_\_\_ and \_\_\_\_\_ invented the calculus of infinitesimals
- f) The scientific discoveries of \_\_\_\_\_ and \_\_\_\_\_ necessitated the invention of \_\_\_\_\_
- g) Place values, negative numbers, and zero were all introduced by \_\_\_\_\_ mathematicians.
- h) Euler defined  $e^x$  by the equation  $e^x = (1 + \frac{x}{n})^n$  where  $n$  is \_\_\_\_\_
- i) In 415AD Greek mathematics \_\_\_\_\_
- j) If I see a triangle whose degrees sum to  $175^\circ$  then I know I am in a \_\_\_\_\_ universe.
- k) An empiricist thinks mathematical axioms come from \_\_\_\_\_

### 2. (25%) Draw the picture that is a geometric demonstration of the fundamental theorem of calculus

