

Mathematics-Science 380 – History of Mathematics
Trent University, 2006–2007

Assignment #8

Due in the week of 5 February, 2007.

“Let’s hear it for the rainbow tour!”*

1. Give a brief explanation of the modern understanding of how ordinary rainbows are formed, accounting for their shape, apparent location, and structure. [5]
2. Give a brief history of the principal attempts between 1000 A.D. and 1500 A.D. to find a scientific explanation of how rainbows are formed. [5]
3. Explain the role that the attempts to explain rainbows you described in your answer to **2** had in the development of the scientific method and the role of mathematics in science. [5]

“If in other sciences we should arrive at certainty without doubt and truth without error, it behooves us to place the foundations of knowledge in mathematics.”

“Mathematics is the gate and key of the sciences. . . . Neglect of mathematics works injury to all knowledge, since he who is ignorant of it cannot know the other sciences or the things of this world.”

Roger Bacon (c. 1214 – 1294)

* From *Evita*, by Tim Rice and Andrew Lloyd Webber.