

# Quantitative Reasoning 28: The Magic of Numbers

## Homework 10

Assigned on Wednesday October 17  
**Due at 12 noon Friday October 19**

Please submit problem sets at the end of the relevant lecture, or leave in the box labeled QR28 outside the Math Department's main office, on the third floor of the Science Center (Room 325).

### Reading:

Gross-Harris, Chapter 8

### Problems:

Please explain your reasoning and show your work.

1. Use the Euclidean algorithm to find the greatest common divisor of 240 and 198.
2. Use the Euclidean algorithm to find the greatest common divisor of 2400 and 1987.
3. (a) Use the Euclidean algorithm to find the greatest common divisor of 11 and 29.  
(b) Express 1 as a combination of 11 and 29.  
(c) Express 2 as a combination of 11 and 29.
4. (a) Use the Euclidean algorithm to find the greatest common divisor of 69 and 87.  
(b) Express 3 as a combination of 69 and 87.  
(c) Can 1 be expressed as a combination of 69 and 87? Why or why not?