

Quantitative Reasoning 28: The Magic of Numbers

Homework 10

Assigned on Wednesday October 15
Due at 12 noon Friday October 17

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 154 and 374.
2. Use the Euclidean algorithm to find the greatest common divisor of 2377 and 1284.
3. (a) Use the Euclidean algorithm to find the greatest common divisor of 13 and 31.
(b) Express 1 as a combination of 13 and 31.
(c) Express 2 as a combination of 13 and 31.
4. (a) Use the Euclidean algorithm to find the greatest common divisor of 57 and 87.
(b) Express 3 as a combination of 57 and 87.
(c) Can 1 be expressed as a combination of 57 and 87? Why or why not?