Problem 176

Triangles ABC and DEF are both equilateral. Point F is the midpoint of AC and E and D lie on the circle. What is the length of a side of triangle DEF?

Triangle ABC is equilateral. What is the radius of the small circle and the length of a side of triangle ABC?

Fibonacci Fun

A Fibonacci-like series can start with any two numbers and follows the same pattern of adding them to get the next term, for example: 11 30 41 71 … and so forth.

a) Start with any two numbers of your choice. Carry out the series to at least 25 terms.

b) What is the ratio of the 24th term to the 23rd term? What is its significance?

c) What is the inverse to this ratio and what is its significance?

d) Apply SDQ (single digit quality) to your series. Do you notice any patterns?

e) Answer a) through d) with other sets of starting numbers that you might deem interesting. Be creative.