14th October

A straight line passes through the points \((m, n)\) and \((p, q)\) where

\[
p = m + 8 \\
n = q - 10
\]

Find the gradient of the line

Show the equation

\[x^2 + 10x = 35\]

has a solution between 2 and 3.

Show the equation

\[x^2 + 10x = 35\]

can be rearranged to give

\[x = \frac{7}{2} - \frac{x^2}{10}\]

Starting with \(x_0 = 2\) use the iteration formula

\[x_{n+1} = \frac{7}{2} - \frac{x_n^2}{10}\]

determine four times to find an estimate for the solution of \(x^2 + 10x = 35\)

Prove the angles in the same segment are equal.