10th December

HJK is a straight line where HJ:JK = 2:3

The coordinates of H are (−4, 8) and the coordinates of J are (5, −1)

Work out the coordinates of the point K

Prove that

\[(2n + 1)^2 - (2n - 1)\]

is an even number for all positive integer values of \(n\).

Write down the exact value of \(\cos(135)\)

On the same graph draw \(y = 1 - \cos(x)\)

Shown is the graph of \(y = \cos(x)\)

DE = 20cm  
EF = 9cm  
GI = 7cm

Calculate angle GEI