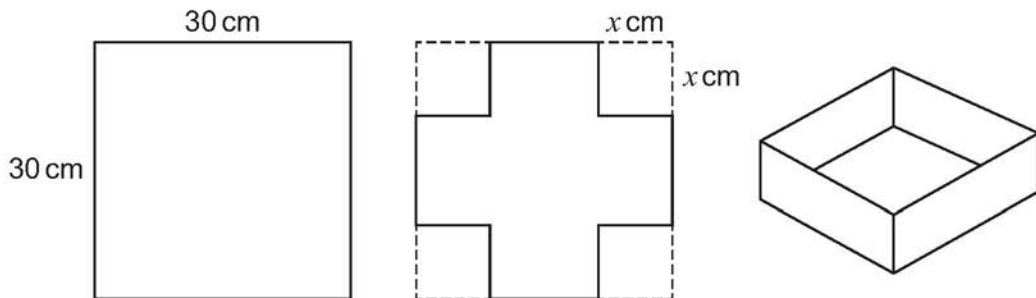**10**   A square sheet of metal has edges 30 cm long.

Four squares each with edge x cm, where $x < 15$, are removed from the corners of the sheet.

The four rectangular sections are bent upwards to form an open-topped box, as shown in the diagrams.

10 (a)   Show that the capacity, C cm^3, of the box is given by

$$C = 900x - 120x^2 + 4x^3$$

[2 marks]

10 (b)   Find the maximum capacity of the box.

Fully justify your answer.

[7 marks]