19

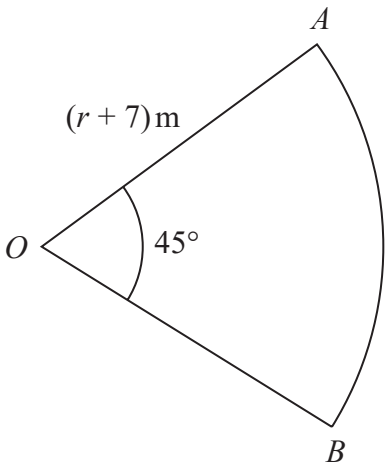


Diagram **NOT** accurately drawn

OAB is a sector **S** of a circle with centre *O* and radius $(r + 7)$ metres.
Angle *AOB* = 45°

A circle **C** has radius $(r - 2)$ metres.

The area of sector **S** is twice the area of circle **C**

Find the value of *r*
Show your working clearly.

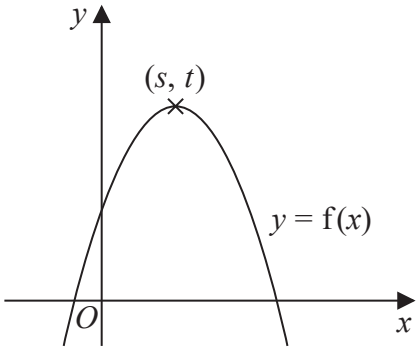
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Question 19 continued.

$r =$ .....

(Total for Question 19 is 5 marks)

20 The diagram shows a sketch of part of the curve with equation $y = f(x)$



There is one maximum point on this curve.
The coordinates of this maximum point are (s, t)

Find, in terms of s and t, the coordinates of the maximum point on the curve with equation

(i) $y = f(x - 2)$

(..... , ...)

(1)

(ii) $y = 3f(x)$

(..... , ...)

(1)

(Total for Question 20 is 2 marks)