Daily Question – Pure Mathematics - Day 7

Topic: Radians - sectors

A plot of land *OAB* is in the shape of a sector of a circle with centre *O*.

Given

- *OA* = *OB* = 5 km
- angle *AOB* = 1.2 radians

(a) find the perimeter of the plot of land.

(2)

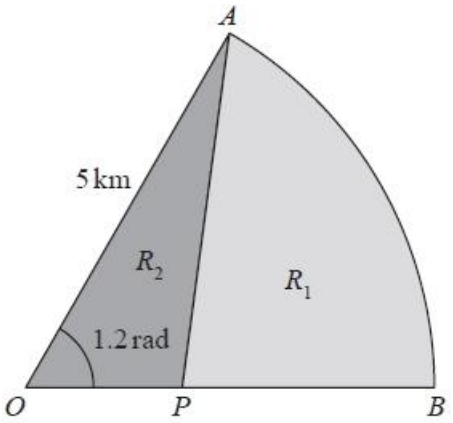


Diagram **NOT** accurately drawn

Figure 2

A point *P* lies on *OB* such that the line *AP* divides the plot of land into two regions R_1 and R_2 as shown in Figure 2.

Given that

area of R_1 = 3 × area of R_2

(b) show that the area of R_2 = 3.75 km^2

(3)

(c) Find the length of *AP*, giving your answer to the nearest 100 m.

(4)

(Total for question = 9 marks)