Leave blank

9. The equation

$$\frac{3}{x} + 5 = -2x + c$$

where c is a constant, has no real roots.

Find the range of possible values of c.

(7)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Leave blank

Question 9 continued

Q9

(Total 7 marks)

Leave blank

10. A sector AOB, of a circle centre O, has radius r cm and angle θ radians.

Given that the area of the sector is 6 cm^2 and that the perimeter of the sector is 10 cm,

(a) show that

$$3\theta^2 - 13\theta + 12 = 0$$

(4)

(b) Hence find possible values of r and θ.

(3)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA