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3. The parabola C has equation $y^2 = 18x$

The point S is the focus of C

(a) Write down the coordinates of S

(1)

The point P, with $y > 0$, lies on C

The shortest distance from P to the directrix of C is 9 units.

(b) Determine the exact perimeter of the triangle OPS, where O is the origin.

Give your answer in simplest form.

(4)

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Question 3 continued

Q3

(Total 5 marks)