2. The hyperbola H has equation

$$kx^2 - y^2 = 9$$

where k is a positive constant.

Given that the point (6, 0) is a focus of H

(a) determine the value of k.

(4)

(b) Hence determine an equation of the corresponding directrix of H

(2)

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Question 2 continued

(Total for Question 2 is 6 marks)