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Answer ALL questions. Write your answers in the spaces provided.

1. A hyperbola H has equation

$$\frac{x^2}{a^2} - \frac{y^2}{9} = 1 \qquad \text{where } a \text{ is a positive constant}$$

The foci of H are at the points with coordinates (6, 0) and (–6, 0)

Find

(a) the exact value of the constant a,

(3)

(b) the equations of the directrices of H.

(3)

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Question 1 continued

Q1

(Total 6 marks)