1. The hyperbola H is defined by the equation

$$\frac{x^2}{48} - \frac{y^2}{b^2} = 1$$

where b is a positive constant.

Given that H has a focus at the point $(8, 0)$, determine

(i) the value of b,

(ii) the exact value of the eccentricity of H.

(5)

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Question 1 continued

(Total for Question 1 is 5 marks)