2. (a) Use algebra to determine the exact x coordinates of the points of intersection of the curves with equations

$$y = \frac{2x}{x^2 + 1} \qquad \text{and} \qquad y = \frac{1}{x + 4}$$

(3)

Hence

(b) determine the values of x for which

$$\frac{2x}{x^2 + 1} < \frac{1}{x + 4}$$

(2)

(c) state the values of x for which

$$\frac{2x}{x^2 + 1} < \frac{1}{|x + 4|}$$

(2)

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Question 2 continued

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Question 2 continued

(Total for Question 2 is 7 marks)