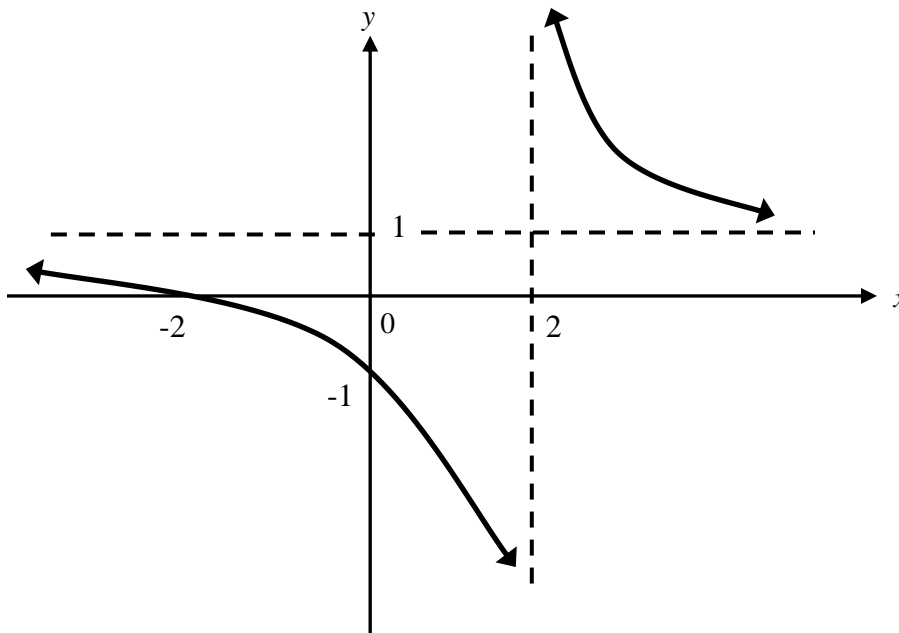# Worksheet 4
Year 12 Mathematics

Write the answers in your Exercise Book.

Study the **hyperbola** shown below and then answer the questions that follow.

(a)   What are the coordinates of the **x-intercept**?   **(½ mark)**

(b)   What are the coordinates of the **y-intercept**?   **(½ mark)**

(c)   State the equation of the **vertical** asymptote.   **(½ mark)**

(d)   State the equation of the **horizontal** asymptote.   **(½ mark)**

(e)   The graph has the equation of the form

$$y = \frac{x+a}{x-b}$$

Find the values of a and b .   **(1 mark)**

(f)   State the **domain** of the function.   **(½ mark)**

(g)   State the **range** of the function.   **(½ mark)**