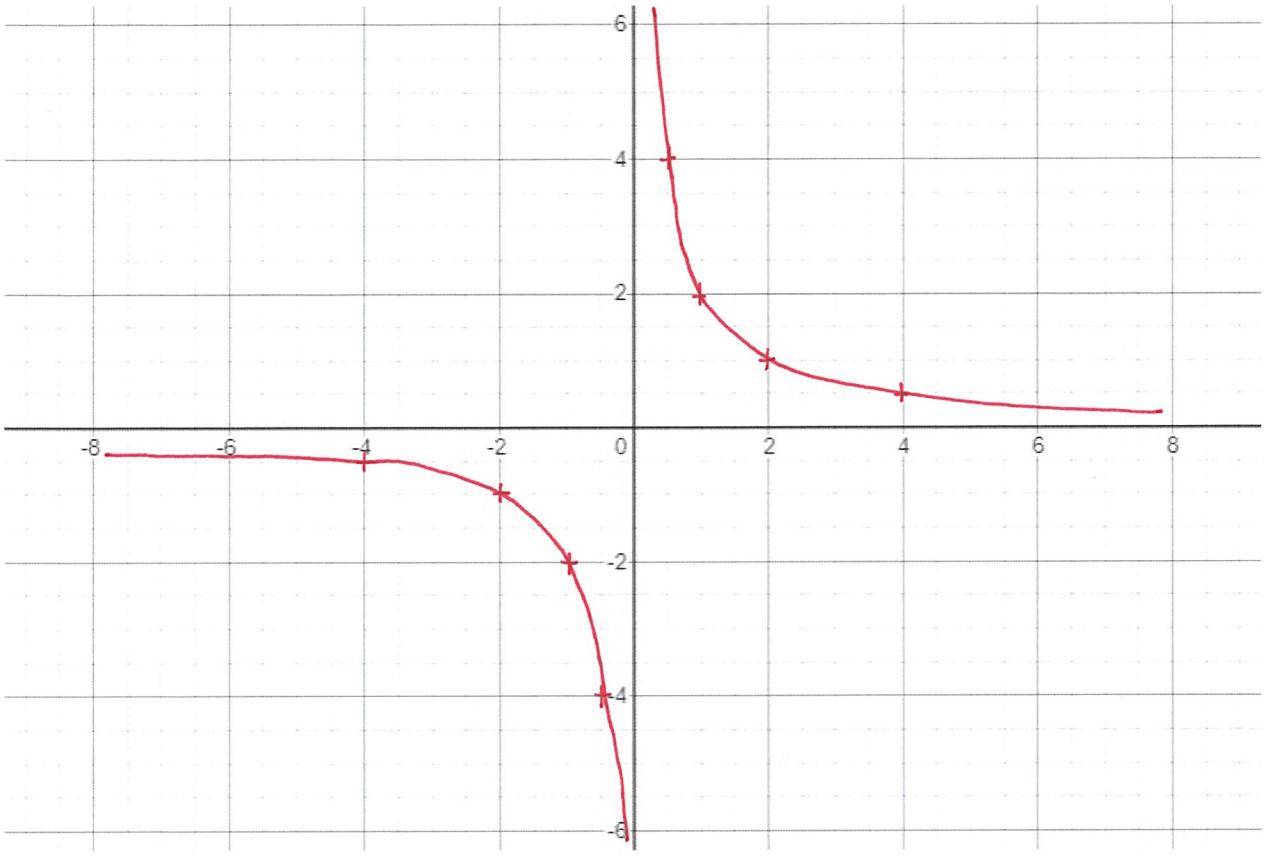
THE EQUATION $y = k/x$ AND INVERSE VARIATION

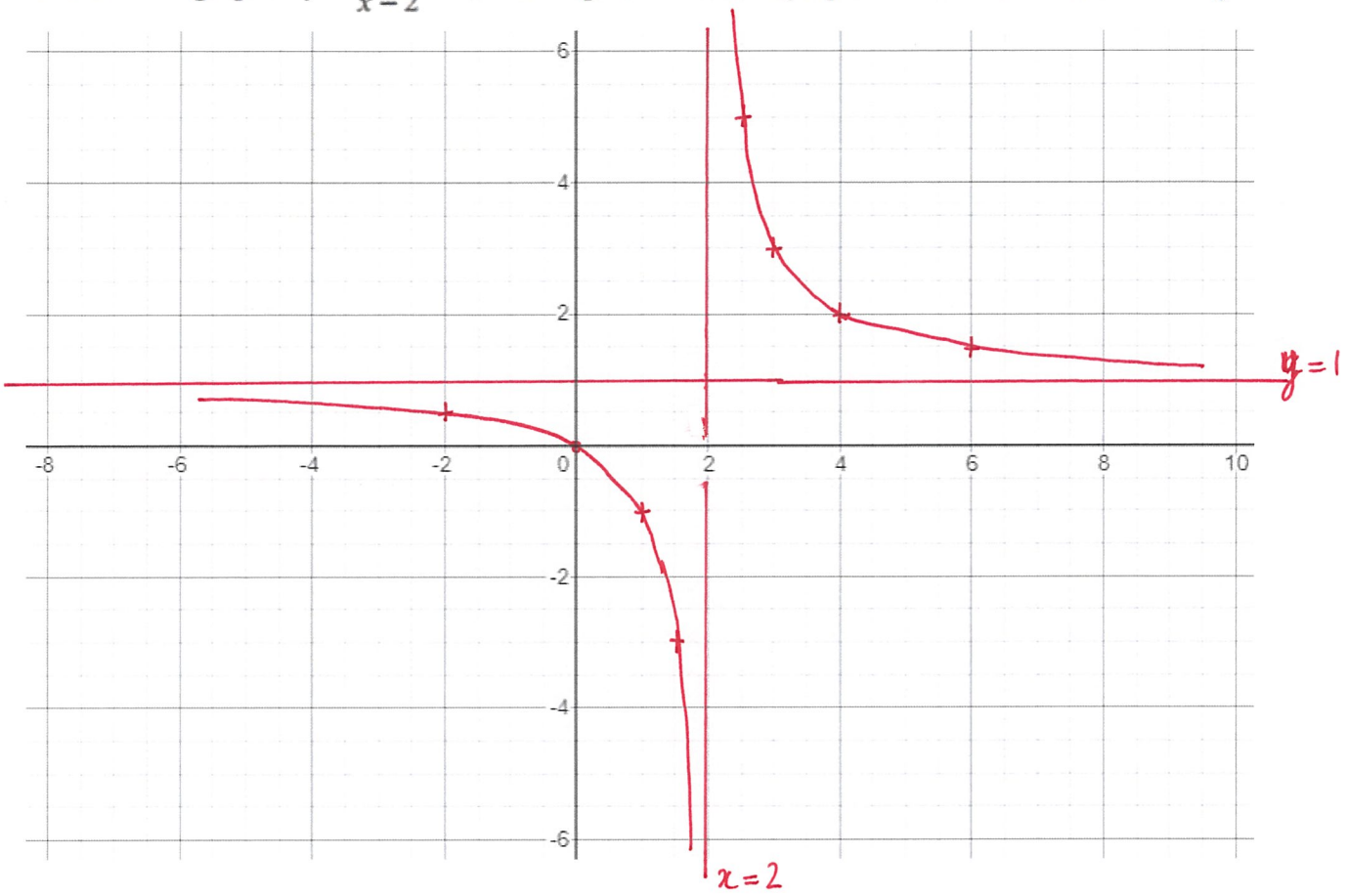
2 Draw the graph of $y = \frac{2}{x}$. Write the equations of its asymptotes.



3 Draw the graph of $y = \frac{x+2}{x}$. Write the equations of its asymptotes, the domain and the range.

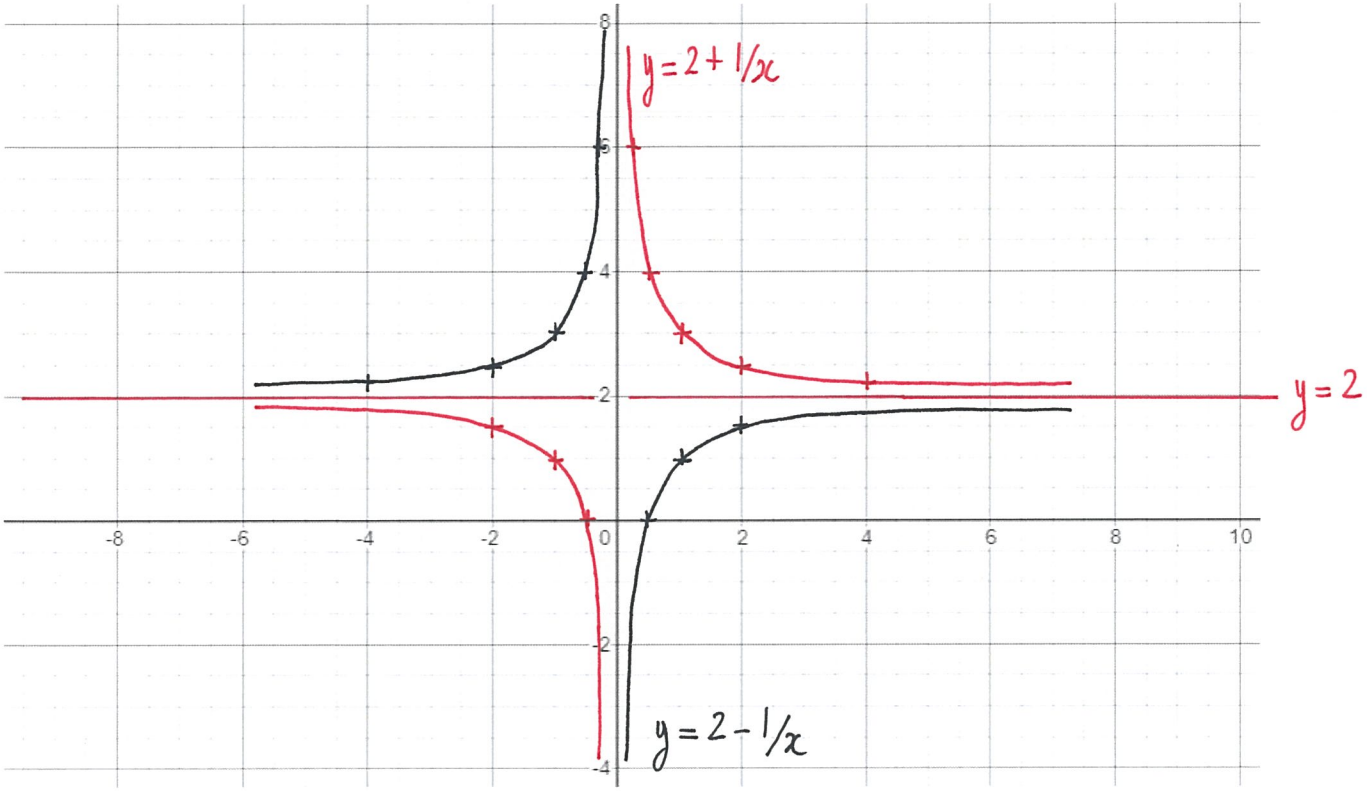
THE EQUATION $y = k/x$ AND INVERSE VARIATION

4 Draw the graph of $y = \frac{x}{x-2}$. Write the equations of its asymptotes, the domain and the range.



THE EQUATION $y = k/x$ AND INVERSE VARIATION

5 **(a)** On the same set of axes, draw the graphs of $y = 2 + \frac{1}{x}$ and $y = 2 - \frac{1}{x}$.
(b) Do these graphs ever intersect?
(c) Comment on their asymptotes.



b) The graphs do not intersect.

c) Their asymptotes are the same.

THE EQUATION $y = k/x$ AND INVERSE VARIATION

6 **(a)** In an experiment it is found that at a temperature of 100°C, 2 litres of argon gas is at a pressure of 15.28 atmospheres. If this gas obeys Boyle's law, $PV = k$, where V is in litres and P is in atmospheres, then find the value of k.

(b) If the volume was expanded to 4 litres with the temperature held at 100°C, then what would be the expected pressure?

(c) If the pressure was increased to 90 atmospheres with the temperature held at 100°C, then what would be the expected volume?

a) $PV = k$ so $k = 15.28 \times 2 = 30.56$

b) $P = \frac{k}{V} = \frac{30.56}{4} = 7.64$ atm

c) $V = \frac{k}{P} = \frac{30.56}{90} \simeq 0.34$ litre