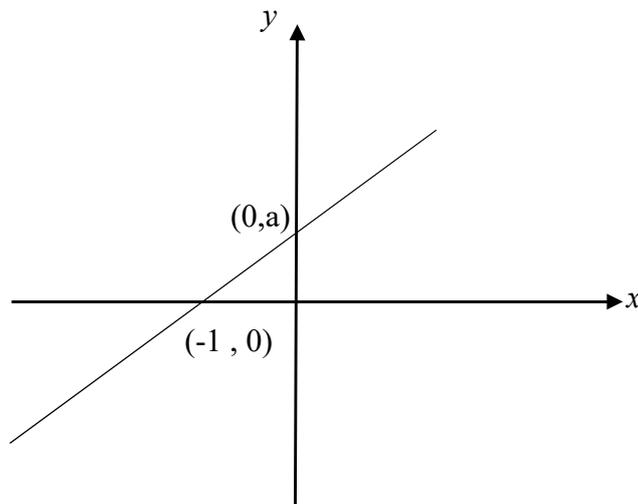
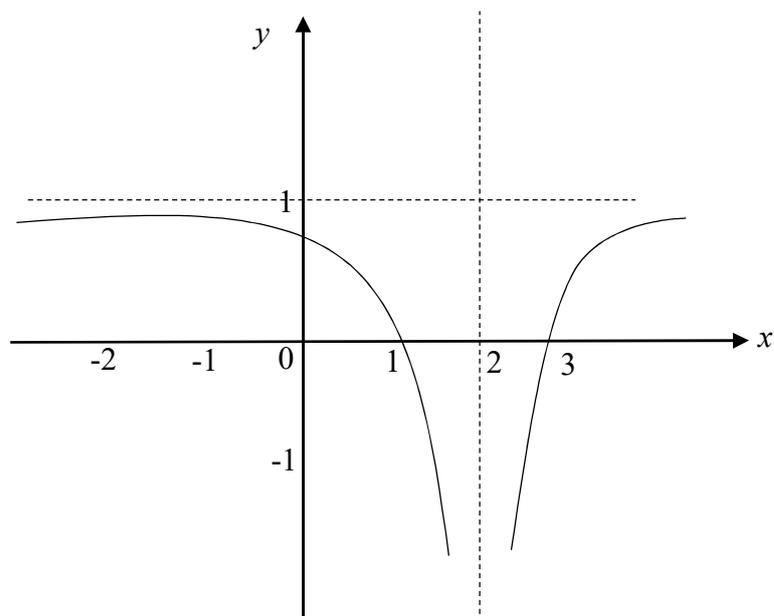


Properties of Functions

1. The diagram shows part of the graph of the function $f(x)$. Sketch the graph of $|f^{-1}(x)|$ showing the points of intersection with the axes.



2. Determine whether $f(x) = x^2 \sin x$ is odd, even or neither. Justify your answer.
3. Find the equations of the asymptotes to the curve $y = \frac{x^3}{(x^2-3)}$.
4. Part of the graph $y = f(x)$ is shown below. The dotted lines indicate where the function has asymptotes. Sketch the graph $y = -f(x + 1)$ showing its asymptotes. Write down the equations of the asymptotes.



5. (a) Identify the point of inflexion on the graph $y = x^5 - 5x^3$.
 (b) Sketch the graph showing the coordinates of all critical points.