

2021 Worksheet 10 Year 12 Mathematics

Write the answers in your Exercise Book.

1. Consider the function

$$f(x) = \log x$$

- (a) Find the coordinates of the **x-intercept**. **(1 mark)**
- (b) State the equation of the **asymptote**. **(1 mark)**
- (c) On a pair of axes, sketch the graph of $f(x)$ **(1 mark)**
- (d) On the same pair of axes, sketch the graph of $f^{-1}(x)$. **(1 mark)**
[Clearly **label** the graphs as $f(x)$ and $f^{-1}(x)$]
- (e) Give the equation of $f^{-1}(x)$ **(1 mark)**
2. Find the **coordinates** of the points of intersection of the functions $y = x$ and $y = x^2$ **(2 marks)**

3. Consider the lines

- $y = kx + 3$ and
- $y = -2x - 9$

Find the value of k if the lines are

- (a) perpendicular. **(1 mark)**
- (b) parallel. **(1 mark)**