

Worksheet 4

Year 13 Mathematics

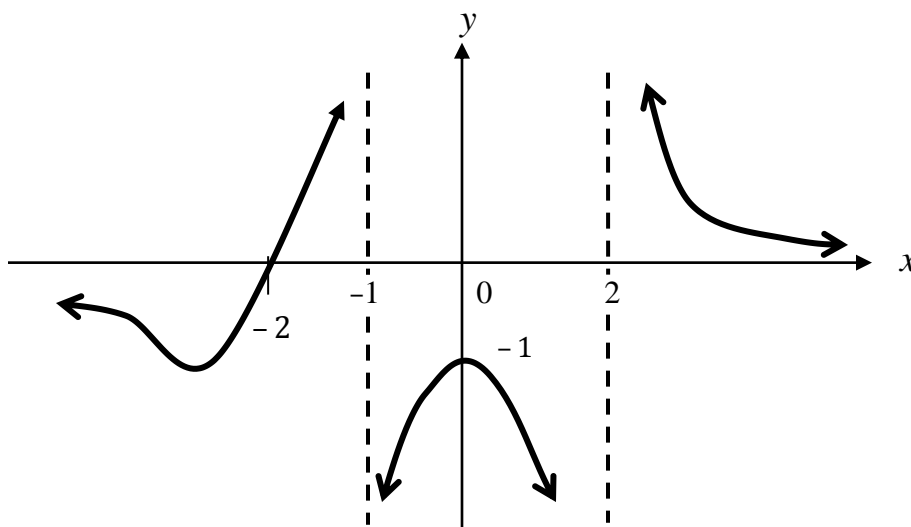
Write the answers in your Exercise Book.

1. Let $f(x) = x^2 + 4$ and $g(x) = \sqrt{x-4}$

Find an expression for $f \circ g(x)$.

(2 marks)

2. Study the **bottom-heavy** function 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 equations of the **vertical** asymptotes. (1 mark)
- (d) State the equation of the **horizontal** asymptote. (½ mark)
- (e) The graph has the equation of the form

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

Find the values of a , b and c .

(1½ marks)