1. Let $f(x) = g + \frac{4}{x-h}$, for $x \neq h$. The line $x = -2$ is a vertical asymptote to the graph of f.

   (a) Write down the value of h (1 mark)

   (b) The graph of f has a y-intercept at (0,5). Find the value of g (4 marks)

   (c) Write down the equation of the horizontal asymptote of the graph of f (1 mark)

Mark scheme:

(a) $h = -2$ (A1)

(b) $f(0) = 5$ (A1)

$5 = g + \frac{4}{0+2}$ (M1)

$5 = g + 2$ (A1)

$g = 3$ (A1)

(c) $y = 3$ (A1) Must be $y =$