

Starter 8th September

Nov 2004 4H

21. Correct to 1 significant figure, $x = 7$ and $y = 9$

(a) Calculate the lower bound for the value of xy

(b) Calculate the upper bound for the value of $\frac{x}{y}$

22.

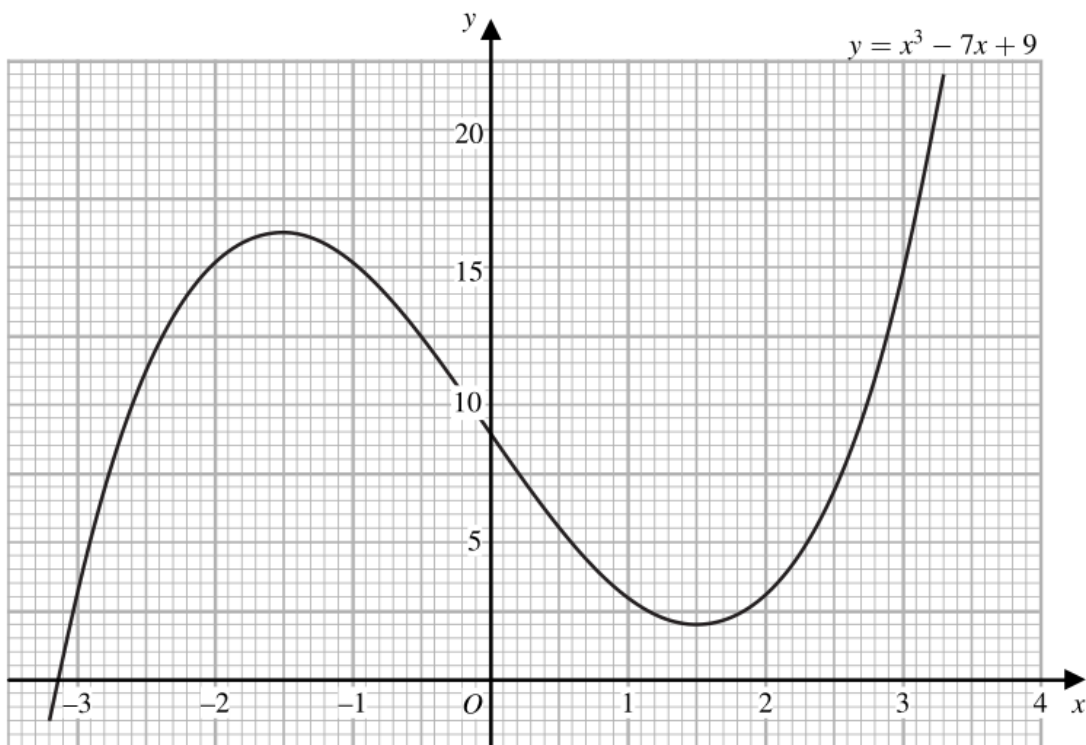
$$f(x) = x^2$$

$$g(x) = x - 6$$

Solve the equation $fg(x) = g^{-1}(x)$

May 2005 3H

20. Part of the graph of $y = x^3 - 7x + 9$ is shown on the grid.



The graph of $y = x^3 - 7x + 9$ and the line with equation $y = k$, where k is an integer, have 3 points of intersection.

- (a) Find the greatest possible value of the integer k .
- (b) By drawing a suitable straight line on the grid, find estimates of the solutions of the equation $x^3 - 6x - 2 = 0$.
Give your answers correct to 1 decimal place.

22. Simplify fully $\frac{2}{x-1} + \frac{x-11}{x^2+3x-4}$

Nov 2005 3H

21. Solve the simultaneous equations $y = 3x^2$
 $y = 2x + 5$