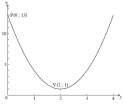


IB Functions Problem 006



atic function $f(x)$, for $0 \leq x \leq 4$, is shown below.

The curve passes through the point $P(0; 13)$, and its vertex is the point $V(2; 1)$.

- A. The function can be written in the form $f(x) = a(x - h)^2 + k$.
 - i. Find the value of h and the value of k .
 - ii Show that $a = 3$.
- B. Calculate the area bounded by the curve of f , the x -axis, and the lines $x = 2$ and $x = 4$.