(9D) Figure 1 shows a sketch of the graph of $y = f(x)$. The graph has a maximum point at (2, 5) and intersects the x-axis at the points (–2, 0) and (6, 0).

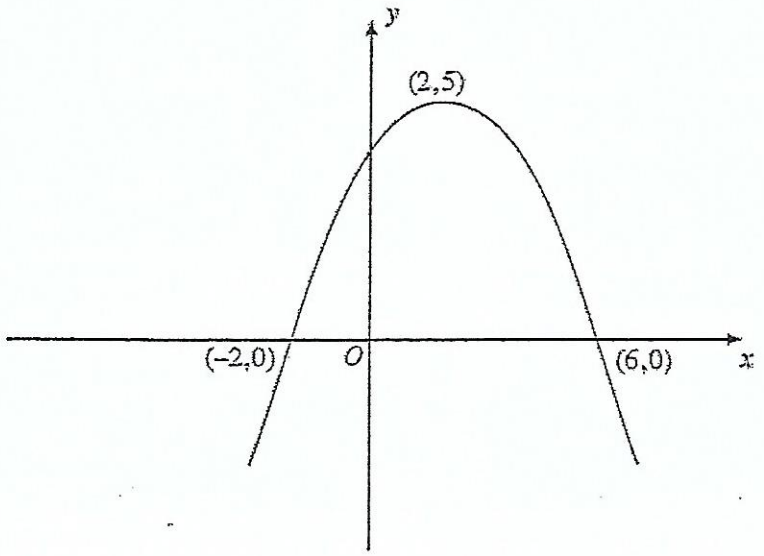

Figure 1

(a) Sketch the graph of $y = f\left(\frac{x}{2}\right)$, indicating the coordinates of the stationary point and the coordinates of the points of intersection of the graph with the x-axis. [3]

(b) Figure 2 shows a sketch of the graph having one of the following equations with an appropriate value of either p, q or r.

$y = f(x + p)$, where p is a constant
$y = f(x) + q$, where q is a constant
$y = rf(x)$, where r is a constant

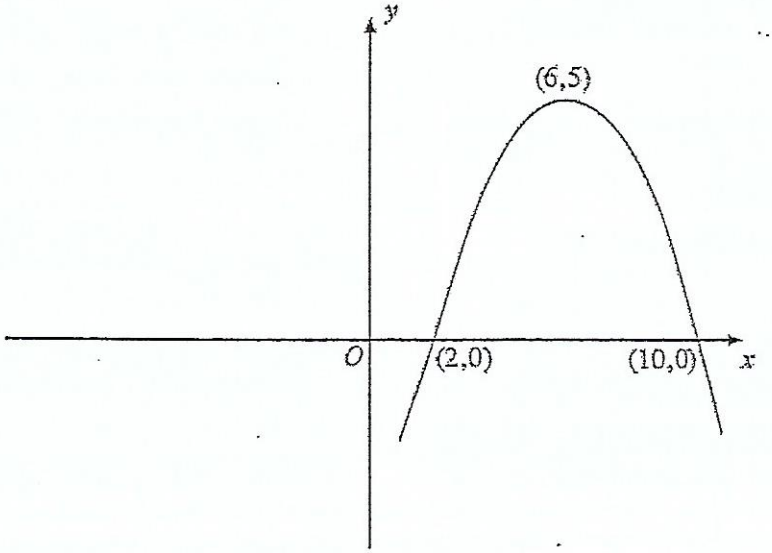

Figure 2

Write down the equation of the graph sketched in Figure 2, together with the value of the corresponding constant. [2]

Jan 10