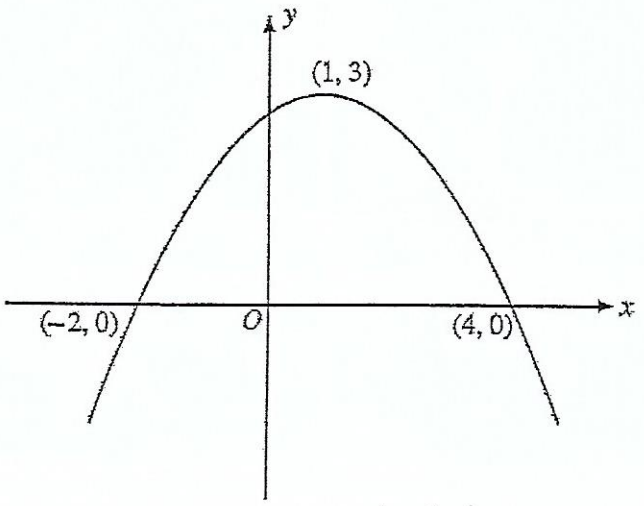
(94) The diagram shows a sketch of the graph of $y = f(x)$. The graph has a maximum point at (1, 3) and intersects the x-axis at the points (−2, 0) and (4, 0).



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

(b) (i) Sketch the graph of $y = f(x) - 5$, indicating the coordinates of the stationary point.

(ii) Given that f is a quadratic function, use the graph you have drawn in part (i) to write down the number of real roots of the equation

$$f(x) - 5 = 0.$$

[3]

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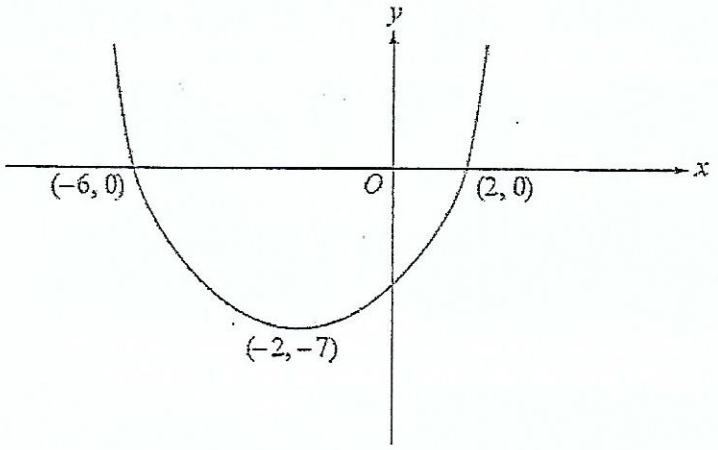
(95) The diagram shows a sketch of the graph of $y = f(x)$. The graph passes through the points (−6, 0) and (2, 0) and has a minimum point at (−2, −7).



Sketch the following graphs, using a separate set of axes for each graph. In each case, you should indicate the coordinates of the stationary point and the coordinates of the points of intersection of the graph with the x-axis.

(a) $y = f(x - 5)$ [3]

(b) $y = f\left(\frac{x}{2}\right)$ [3]

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