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1. Find $\int (2 + 5x^2) dx$.

(3)

Q1

(Total 3 marks)



3.

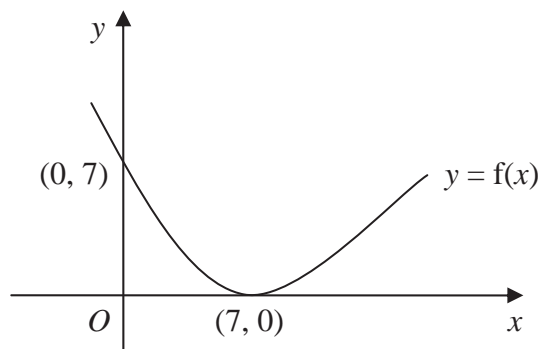
**Figure 1**

Figure 1 shows a sketch of the curve with equation $y = f(x)$. The curve passes through the point $(0, 7)$ and has a minimum point at $(7, 0)$.

On separate diagrams, sketch the curve with equation

(a) $y = f(x) + 3$, (3)

(b) $y = f(2x)$. (2)

On each diagram, show clearly the coordinates of the minimum point and the coordinates of the point at which the curve crosses the y -axis.



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6. The curve C has equation $y = \frac{3}{x}$ and the line l has equation $y = 2x + 5$.

(a) On the axes below, sketch the graphs of C and l , indicating clearly the coordinates of any intersections with the axes. (3)

(b) Find the coordinates of the points of intersection of C and l . (6)

