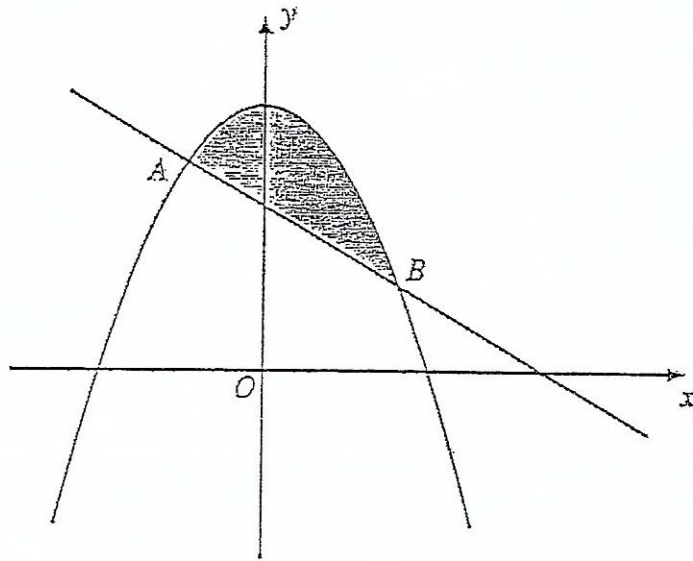121. The region R is bounded by the curve $y = 3x + \frac{1}{5}x^3$, the x-axis and the lines $x = 1, x = 3$. Find the area of R. [5]

122. *(b)*

The diagram shows a sketch of the curve $y = 25 - x^2$ and the line $y = -2x + 17$. The line and the curve intersect at the points A and B.
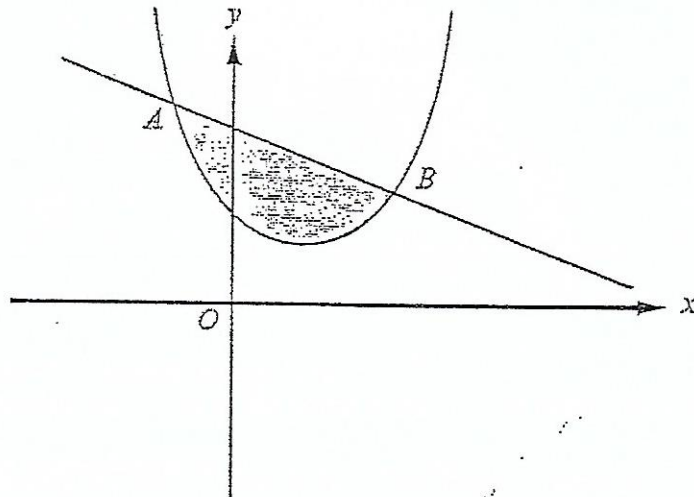
(i) Find the coordinates of A and B. [4]

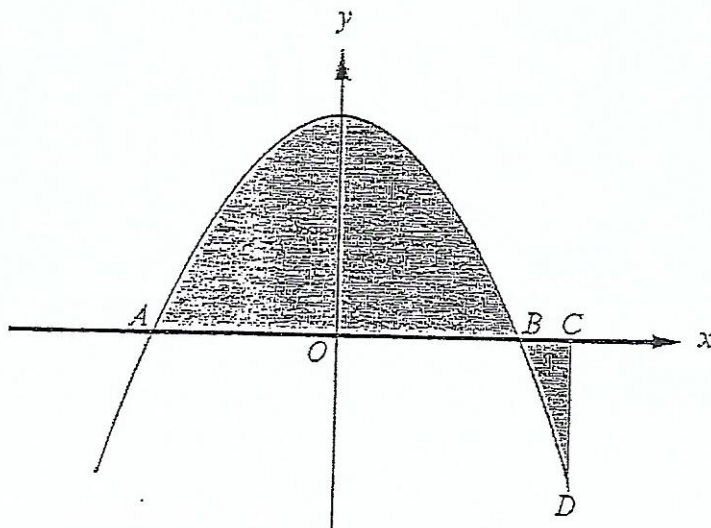(ii) Find the area of the shaded region. [7]

123. *(b)*

The diagram shows a sketch of the curve $y = x^2 - 4x + 6$ and the line $y = -x + 10$. The curve and the line intersect at the points A and B.

(i) Showing your working, find the coordinates of A and B.

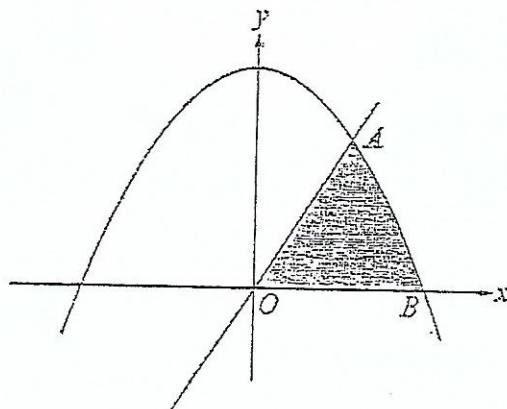(ii) Find the area of the shaded region.

[11]

124. (b)

The diagram shows a sketch of the curve $y = 4 - x^2$.
The curve intersects the x-axis at the points A and B. The point C has coordinates $(3, 0)$.
The point D lies on the curve and CD is parallel to the y-axis.

(i)   Showing your working, find the x-coordinates of the points A and B.   [2]

(ii)   Find the total area of the shaded regions.   [6]

125. (b)

The diagram shows a sketch of the curve $y = 36 - x^2$ and the line $y = 5x$. The curve and the line intersect at the point A in the first quadrant and the curve intersects the positive x-axis at the point B.

(i)   Showing your working, find the coordinates of A and the coordinates of B.

(ii)   Find the area of the shaded region.   [10]