9. **In this question you must show all stages of your working.**

Solutions relying entirely on calculator technology are not acceptable.

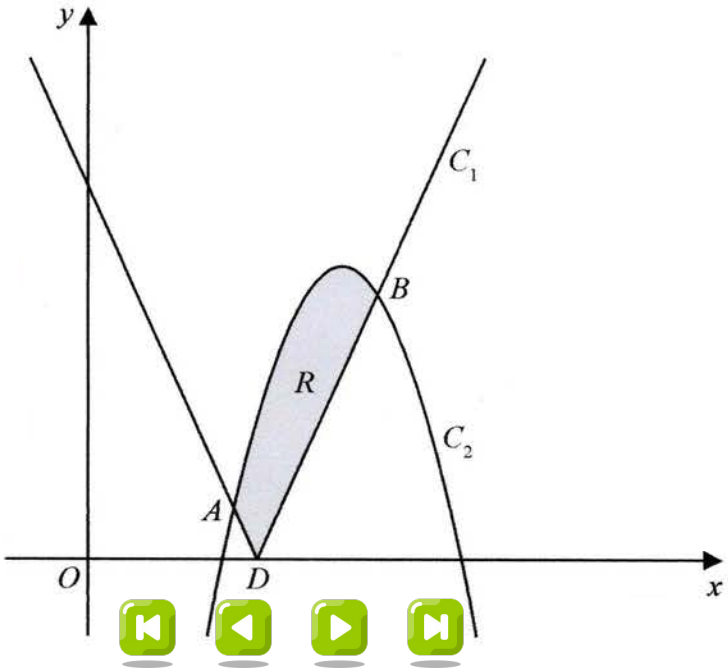

Figure 2

In Figure 2

- the graph C_1 has equation $y = |7 - 3x|$
- the curve C_2 has equation $y = -2x^2 + 14x - 19$
- C_1 intersects C_2 at the points A and B

Given that C_1 meets the x-axis at the point D, as shown in Figure 2,

(a) find the x coordinate of D.

(1)

(b) Verify that the x coordinate of A is 2

(1)

(c) Using algebra and showing your working, find the coordinates of B.

(3)

The region R, shown shaded in Figure 2, is bounded by C_1 and C_2

(d) Use algebraic integration to find the area of R.

(5)