

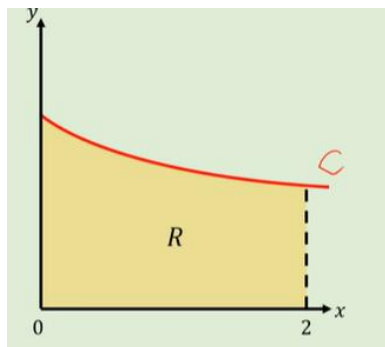
11H part 2 Integrating Parametric Equations

Note that this was initially left out of the textbook, so depending on your edition, you may not have practise questions. I will be using the old C4 notes and examples to talk through the theory.

1. The curve has parametric equations

$$x = t(1 + t) \quad y = \frac{t}{1 + t}$$

Find the exact area of the region R , bounded by the curve C , the x -axis and the lines $x=0$ and $x=2$

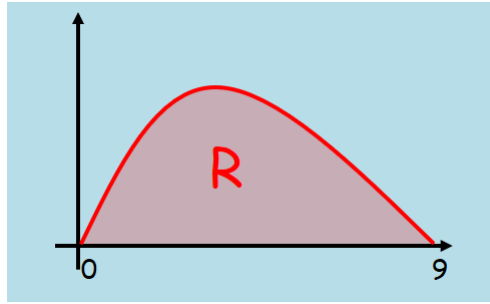


2. A curve has Parametric equations:

$$x = 5t^2 \quad y = t^3$$

Work out:

$$\int_5^{20} y \, dx$$



3. The diagram shows a sketch of the curve with Parametric equations:

The curve meets the x-axis at $x = 0$ and $x = 9$. The shaded region is bounded by the curve and the x-axis.

$$x = t^2 \quad y = 2t(3 - t) \quad t \geq 0$$

a) Find the value of t when:

- i) $x = 0$
- ii) $x = 9$

b) Find the Area of R

4. The diagram shows a sketch of the curve with Parametric equations:

$$x = 2t^2 \quad y = t(4 - t^2)$$

Calculate the finite area inside the loop...

