

**AQA – Integration – AS Mathematics P2**

1. [June/2021/Paper\\_7356/2/No.3](#)

It is given that

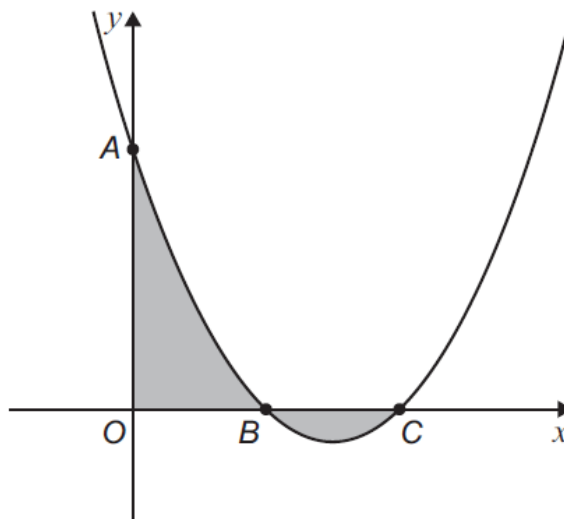
$$\frac{dy}{dx} = \sqrt{x}$$

Find an expression for  $y$ .

**[3 marks]**

## 2. June/2021/Paper\_7356/2/No.7

The diagram below shows the graph of the curve that has equation  $y = x^2 - 3x + 2$  along with two shaded regions.



- (a) State the coordinates of the points  $A$ ,  $B$  and  $C$ .

[2 marks]

**(b)** Katy is asked by her teacher to find the total area of the two shaded regions.

Katy uses her calculator to find  $\int_0^2 (x^2 - 3x + 2) dx$  and gets the answer  $\frac{2}{3}$

Katy's teacher says that her answer is incorrect.

**(b) (i)** Show that the total area of the two shaded regions is 1

Fully justify your answer.

**[5 marks]**

**(b) (ii)** Explain why Katy's method was not valid.

**[1 mark]**