

# M203 Solutions to Specimen Examination Paper

This is a rough guide to the type of written solutions required. We do not expect your solutions to be as neatly laid out as these and, of course, for some questions there are alternative ways of doing them. Any correct method receives full marks unless the question specifically asks for a particular method.

A mark scheme is provided so that you can mark your own attempts. This uses accuracy marks (A-marks) and method marks (M-marks) with an indication as to how these are awarded.

A few comments are included to try to help you with your revision and your examination technique.

## SOLUTIONS TO PART I

Mark scheme and comments

### Question 1

- (a) We eliminate  $t$  between the two given equations:

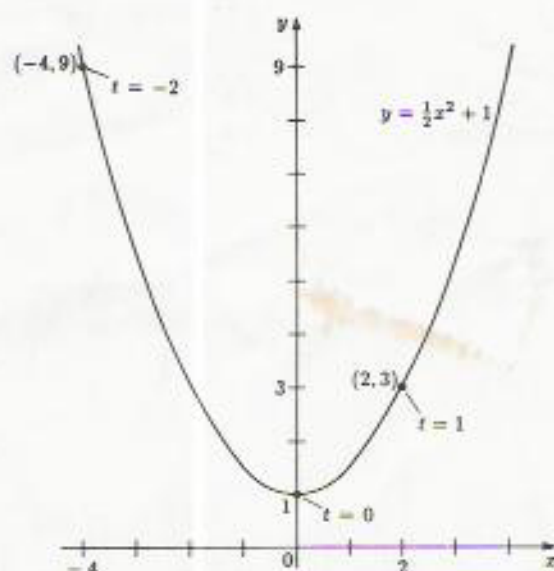
$$\begin{aligned} t = \frac{1}{2}x, \quad \text{so } y &= 2\left(\frac{1}{2}x\right)^2 + 1 \\ &= \frac{1}{2}x^2 + 1. \end{aligned}$$

This is the equation of a parabola.

$\frac{1}{2}$  M for idea

$\frac{1}{2}$  A for equation

$\frac{1}{2}$  A for answer



$\frac{1}{2}$  A for shape of curve

$\frac{1}{2}$  A for points

When  $t = 0$ ,  $x = 0$ ,  $y = 1$ .  
When  $t = 1$ ,  $x = 2$ ,  $y = 3$ .  
When  $t = -2$ ,  $x = -4$ ,  $y = 9$ .

$\frac{1}{2}$  A for working