Exercise 2

Paper 1 style · No calculator

2 5 marks SL 2.7 ●●○ Typical

The equation $x^2 + kx + 9 = 0$ has two equal real roots.

(a) Find the possible values of k. **[3]**

(b) For the positive value of k, solve the equation. **[2]**

The markscheme is on the next page: try the question first. Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software. Not affiliated with or endorsed by the International Baccalaureate Organization.
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MARKSCHEME (a)

$\Delta = k^2 - 36$ **(A1)**

$k^2 - 36 = 0$ **M1**

$k = \pm 6$ **A1**

Total 3 marks

MARKSCHEME (b)

$x^2 + 6x + 9 = (x + 3)^2 = 0$ **(M1)**

$x = -3$ **A1**

Total 2 marks