

DATA

ATAQ

$$d) \log_{\frac{1}{3}} (3x^2 - 4x - 17) = \log_{\frac{1}{3}} (2x^2 - 5x + 3)$$

$$3x^2 - 4x - 17 = 2x^2 - 5x + 3 \rightarrow x^2 + x - 20 = 0$$

$$\Delta = 1^2 - 4 \cdot 1 \cdot (-20) \rightarrow \Delta = 1 + 80 \rightarrow \Delta = 81$$

$$x = \frac{-1 \pm 9}{2} \quad x_1 = \frac{8}{2} = 4$$

$$x_2 = -5$$

$$2 \cdot 4^2 - 5 \cdot 4 + 3$$

$$2 \cdot 16 - 20 + 3$$

$$2 \cdot (-5)^2 - 5 \cdot (-5) + 3$$

$$2 \cdot 25 + 25 + 3$$

$$50 + 28 = 78 > 0 \rightarrow [OK]$$

$$(32 - 20 + 3) \rightarrow 12 + 3 = 15$$

$$15 > 0 [OK]$$

$$S = \{-5, 4\}_{//}$$

B.167. Resolução \square

$$d) \log_4 (2x^2 + 5x + 4) = 2 \rightarrow 4^2 = 2x^2 + 5x + 4 \rightarrow$$

$$16 = 2x^2 + 5x + 4 \rightarrow 2x^2 + 5x - 12 = 0 \rightarrow \Delta = 5^2 - 4 \cdot 2 \cdot (-12)$$

$$\Delta = 25 + 96 \rightarrow \Delta = 121 \rightarrow x = \frac{-5 \pm 11}{4} \quad x_1 = \frac{6}{4} = \frac{3}{2}$$

$$x_2 = \frac{-16}{4} = -4$$

$$2 \cdot \left(\frac{3}{2}\right)^2 + 5 \cdot \left(\frac{3}{2}\right)$$

$$2 \cdot \left(\frac{9}{4}\right) + \frac{15}{2} \rightarrow \frac{18}{4} + \frac{15}{2} > 0$$

$$S = \left\{\frac{3}{2}, -4\right\}_{//}$$

$$2 \cdot (-4)^2 + 5 \cdot (-4) + 4$$

$$2 \cdot 16 - 20 + 4 \rightarrow 32 - 20 + 4 \rightarrow 16 > 0$$