

Soluție

1.a) $m = 7$

1.b) $M_1(1,1); M_2\left(\frac{4m-3}{25}, \frac{3m+4}{25}\right); M_3\left(\frac{2m-9}{5}, \frac{12-m}{5}\right), m \in \mathbb{Z}.$

Considerăm $m = 25k + 7, k \in \mathbb{Z}$

1.c) $S = \frac{1}{2} \cdot |\Delta|, \Delta = \frac{1}{25}(-m+7)(14-2m); S = 1 \Leftrightarrow m \in \{2, 12\}$

2.a) $f(-1) = 0$

2.b) $f(x) = (x+1)(2x^2 - (a+2)x + 2)$; Rădăcinile sunt reale pentru $a \in (-\infty, -6] \cup [2, \infty)$

2.c) $x_1 = -1; x_3 = \frac{1}{x_2}; |x_2| + |x_3| = 2 \Leftrightarrow |x_2| = 1 \Leftrightarrow a \in [-6, 2)$