ROMANIAN MATHEMATICAL MAGAZINE

J.2513 Find the rational roots of the equation:

$$6x^4 - 19x^3 - 7x^2 + 26x + 12 = 0$$

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We will use Horner:

$$\begin{array}{cccccc} & 6 & -19 & -7 & 26 & 12 \\ 3 & 6 & -1 & -10 & -4 & 0 \\ -\frac{1}{2} & 6 & -4 & -8 & 0 & \end{array}$$

The equation $3x^2 - 2x - 4 = 0$ has no rational roots,

because its discriminant is equal to 13.

It follows that the rational roots of the given equation are $x_1 = 3, x_2 = -\frac{1}{2}$.